DOCUMENT RESUME

ED 075 035 LI 004 271

TITLE	Proceedings of Military Librarians' Workshop (16th, October 2-4, 1972) Technology Transfer.
INSTITUTION	Redstone Scientific Information Center, Redstone Arsenal, Ala.
PUB DATE	72
NOTE	109p.; (120 References)
EDRS PRICE	MF-$0.65 HC-$6.58
DESCRIPTORS	*Information Services; Information Systems; *Library Cooperation; National Libraries; *Special Libraries; Workshops
IDENTIFIERS	Department of Defense; Military Libraries; Scientific and Technical Information; *Technology Transfer

ABSTRACT

The major emphasis of this workshop is on "Technology Transfer." Although there appear to be many definitions of technology transfer, the basic concept is always the same -- finding ways to get technology out of the laboratory and into industrial or governmental applications. It is also clear that so far technology transfer has not been as successful as we would like to see it. NASA pioneered the technology transfer concept, yet NASA's major de facto effort has been dissemination of technical information and not transfer of technology as was proposed. The technology transfer process goes through four successive stages: (1) search, (2) adaptation, (3) implementation, and (4) maintenance. The search stage takes the generator and user from an unrecognized transfer opportunity to establishment of a viable contact. Adaptation can be termed the "go - no go" stage, the point at which a decision is made to proceed with the technology offered or move into another area. The implementation stage is the time to marshal the needed resources -- capital, organization, and human. At the end of this stage the technology is transferred, and all that is needed from then on is to maintain it, evaluating all effects and benefits. (ED 056 699 is a related document.) (Author/NH)

ED 075035

U.S. DEPARTMENT OF HEALTH,
EDUCATION & WELFARE
OFFICE OF EDUCATION
THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL OFFICE OF EDUCATION POSITION OR POLICY.

PROCEEDINGS

of

16th MILITARY LIBRARIANS' WORKSHOP

held on

2-4 OCTOBER 1972

Host:

REDSTONE SCIENTIFIC INFORMATION CENTER
US ARMY MISSILE RESEARCH, DEVELOPMENT
AND ENGINEERING LABORATORY
US ARMY MISSILE COMMAND
REDSTONE ARSENAL, ALABAMA 35809

LI 004 271

FILMED FROM BEST AVAILABLE COPY

CONTENTS

		Page
Program		vii
Keynote Address		
TECHNOLOGY TRANSFER	Julian S. Kobler	1
Workshop Sessions		
TECHNOLOGY TRANSFER	Stanley Kalkus	9
PROCUREMENT	Mariana Thurber	15
POSITION DESCRIPTIONS	Ingjerd O. Omdahl	17
EMPLOYMENT DEVELOPMENT	Herbert Holzbauer	21
INTEGRATED ON-LINE NETWORKS AND DEFENSE RDT&E ON-LINE SYSTEM	Joseph M. Powers	53
WORK MEASUREMENT AND STATISTICS	Lt Col Claude Johns	59
UTILIZATION OF FINANCIAL AND HUMAN RESOURCES	Gerald M. Coble	63
ORGANIZATION OF DOCUMENT COLLECTION	Sara Dearman	83
Business Sessions		93
Participants		95
Sponsors of Military Librarians' Workshops		105

FOREWORD

The 16th Military Librarians' Workshop began with a warm welcome extended by BG Louis Rachmeler, the Army Missile Command's Acting Commanding General during the temporary absence of MG Edwin I. Donley. He expressed appreciation to the assembled group -- the leading librarians of the Department of Defense -- for their attendance and participation in the discussions on technology transfer and its implications in defense missions.

Approximately 200 librarians took an active part in the Workshop Sessions on selected topics, and in the Army, Navy, and Air Force Group Meetings. No attempt has been made in the proceedings to reproduce the discussions as they developed in the sessions or meetings. The essence of the discussions, particularly the conclusions and recommendations reached by each group, are reported by the Discussion Leader, or in some cases by subgroup leaders.

Cleo S. Cason
Jane F. Bentley
Co-Chairmen
16th Military Librarians' Workshop

Chairmen
Mrs. Cleo S. Cason Mrs. Jane F. Bentley
Mrs. Clara T. Rogers

Miss Ada E. Schwartz
Director
Army Library Program

Dr. Julian S. Kobler
Keynote Speaker

PROGRAM

"TECHNOLOGY TRANSFER"

SUNDAY
1 October 1972

1600-1800	Registration	Sheraton

MONDAY
2 October 1972

0800-1000	Registration Coffee & Rolls	Sheraton
1000-1130	Opening Session - Ms. Cleo S. Cason, Presiding	Sheraton

Welcome
BG Louis Rachmeler, Deputy CG
US Army Missile Command

Keynote Address - "Technology Transfer"
Dr. Julian S. Kobler, Director
Redstone Scientific Information Center

1130	Buses leave Sheraton for Officers' Club	
1200-1300	Lunch	Officers' Club
1300	Buses leave Officers' Club for RSIC	
1330-1630	Tour of Redstone Scientific Information Center	
1630	Buses leave RSIC to return to Sheraton	

TUESDAY
3 October 1972

0900-1015	Workshop Sessions *	Sheraton
1015-1045	Coffee & Rolls	Sheraton
1045-1200	Workshop Sessions *	Sheraton
1200-1330	Lunch	Sheraton
1330-1430	Workshop Sessions *	Sheraton
1430-1500	Coffee	Sheraton
1500-1630	Workshop Summaries - Ms. Cleo S. Cason, Presiding	Sheraton
1800	Buses leave Sheraton for Officers' Club	
1830-2100	Social Hour and Dinner	Officers' Club
2100	Buses leave Officers' Club to return to Sheraton	

---

*WORKSHOP SESSIONS
(Assigned Areas)

GROUP	TOPICS	DISCUSSION LEADER
1	Technology Transfer	Mr. Stanley Kalkus
2	Procurement	Ms. Mariana Thurber
3	Position Descriptions	Ms. Ingjerd O. Omdahl
4	Employee Development (Cancelled)	Mr. Herbert Holzbauer
5	Integrated On-Line Networks	Mr. Joseph M. Powers
6	Work Measurement & Statistics	Lt Col Claude Johns
7	Utilization of Financial and Human Resources	Mr. Gerald M. Coble
8	Organization of Document Collections	Ms. Sara Dearman

WEDNESDAY
4 October 1972

0900-1030	ANAF Group Meetings Army - Ms. Ada E. Schwartz Navy - Ms. Pearl O. Robinson Air Force - Mr. John L. Cook	Sheraton
1030-1100	Coffee & Rolls	
1100-1200	Business Session - Ms. Virginia E. Eckel, Presiding Report of Federal Library Committee - Mr. F. Kurt Cylke Report of Long Range Planning Committee - Ms. Margrett B. Zenich MLD Announcements	
1200-1330	Lunch	Open
1330	Buses leave Sheraton for tour of Alabama Space & Rocket Center. See Mr. Frank M. London, Transportation Officer, for details.	

Keynote Address

TECHNOLOGY TRANSFER

Dr. Julian S. Kobler
Director, Redstone Scientific Information Center

One of the most critical problems facing us as information specialists within DOD is the transfer of technology. The general nature of the task, and some of the existing mechanisms for achieving it, can be illustrated by the technology interface system established at the Army Missile Command. A large technology base, continually fed by research, must be related to hardware and finally converted into weapon systems. The research is conducted in discrete functional disciplines involved in missile technology, for example, propulsion, guidance and control, aerodynamics, ground support equipment, and new systems concepts. All the stored and newly developed data must be applied in support of all types of systems -- close support, general support, air defense, and multipurpose -- and at all stages -- conceptual, development, or fielded.

Thus, technology transfer might be defined as the channeling of advanced technology in promising directions for significant purposes other than the immediate use for which it was developed. In actuality, of course, the problem cannot be packaged that neatly: you have inputs from the outside and then must have output to the external environment, so the problem becomes one of relationships. In technology, the participants in these relationships are the generators and the users. These participants must have a relationship to each other, and they must have that same relationship to technology and the ability to transfer that technology.

The technology transfer process goes through four successive stages: 1) search, 2) adaptation, 3) implementation, and 4) maintenance. The search stage takes the generator and user from an unrecognized transfer opportunity to establishment of a viable contact. Before this contact can be achieved, the generator's capabilities must be related to the user's needs, and contact channels must be mutually provided. Adaptation can be termed the "go - no go" stage, the point at which a decision is made to proceed with the technology offered or move into another area. To develop a basis for this decision, a transfer project is formulated. The user makes a preliminary evaluation of the potential effectiveness and the socio-economic implications, and investigates the desirability of alternatives. The generator meanwhile is evaluating the user's environment, the feasibility of the technology, and the costs

TECHNOLOGY TRANSFER

	GENERATOR	*USER*
SEARCH		
	Unrecognized transfer opportunity	
	Establish policies and priorities	Establish policies and priorities
	Identify capabilities	Identify needs
	Develop incentives to search for needs	Develop incentives to search for capabilities
	Provide channels for contact	Provide channels for contact
	Establish viable contact	
ADAPTATION		
	Formulate transfer project	
	Evaluate adaptation requirements	Evaluate effectiveness
	Learn environment of user	Evaluate socio-economic implications
	Evaluate cost	Evaluate other alternatives
	Evaluate feasibility	Evaluate desirability
	Analyze cost effectiveness	
IMPLEMENTATION		
	Recruit resources	
	Overcome prejudice	Build cohesive organization
	Consider capital and hardware	Consider people and emotions
	Provide training	Provide supporting elements
	Overcome reluctance to change	Enlist bureaucratic support
	Run pilot operation	
MAINTENANCE		
	Run full-scale operation	
	Assist in trouble-shooting	Evaluate side effects
	Delegate authority	Ensure compatibility with supporting elements
	Identify diversification possibilities	Perform concurrent R&D
	Evaluate benefits	Evaluate benefits
	Evaluate returns	

involved. The implementation stage is the time to marshal the needed resources -- capital, organizational, and human. This requires detailed planning and preparation of all aspects involved, and the information fed into the project at this stage must come from many directions. Prejudices and reluctance to change may have to be overcome, training provided, and bureaucratic support enlisted. At the end of this stage the technology is transferred, and all that is needed from then on is to maintain it, evaluating all effects and benefits.

The importance of assessing technology before applying it cannot be overstressed. A systematic study must be made of the effects on society that may occur when a technology is introduced, extended, or modified, with special emphasis on impacts that are unintended, indirect, and maybe delayed. A splendid achievement in one area may have a very adverse reaction in another. A well-known example, of course, is the technological advance represented by the modern turbine engine, which increased automotive transportation enormously but created a real problem in air pollution. Such assessment is, of course, primarily the responsibility of the user.

The sources of technology transfers include:

- In-house
- Other DOD agencies
- Other government laboratories
- Industry (including IR&D)
- Nonprofit institutions
- Universities
- Foreign governments and agencies.

The first place we turn, when any new technology is needed or any problem encountered, is in-house. Further information is gathered from agencies within DOD, which is readily accomplished by DDC on-line terminals. Industries, particularly in their independent research and development work, provide excellent sources. The automated technology utilization system for IR&D operated by the Redstone Scientific Information Center, which as far as we know is the only one in existence, will be described a little later. Foreign technology is also explored for possible US applications. At present the Missile Command is evaluating three foreign air defense systems -- the French Crotale, the British Rapier, and the Roland which is being developed jointly by France and West Germany. Some of their technology may save us effort on particular problems.

TRADITIONAL TRANSFER MECHANISMS

- Intersectoral movement
- Organizational diversification
- Conventional library systems
- Technical journals
- College classrooms

The traditional mechanisms for technology transfer revolve around movement of people and the conventional libraries, journals, and university classrooms. These are no longer sufficient. Today's rapid pace of discovery demands some complementary mechanisms for adequate communication. And traditional sources so frequently have built-in barriers to communication and utilization of technology, in such forms as organizational inertia, entrenched vested interests, lack of interchange with other sources, and an unwillingness to relate to others' interests and needs. There is no purpose in accumulating the biggest and best collection in the world and then constructing a moat around your organization. To bridge the gulf between technology generators and users, you must find the source, screen and organize the information, relate it to ongoing efforts, and alert the potential users. As stated in the famous Weinberg Report of the early 1960's:

> "Transfer of information is an inseparable part of research and development. All those concerned...must accept the responsibility for the transfer of information in the same degree and spirit that they accept responsibility for research and development itself."

If this spirit is not maintained, the US will have a fragmented research and development program and find itself falling behind in technology.

The interest aroused by this report in the President's Scientific Advisory Council, in Congressional committees, and in other high government circles, created or greatly increased support for complementary mechanisms that would be more specialized but farther reaching.

Some excellent techniques for programmed, selective dissemination of information have been or are being devised, nationally at DDC and locally at RSIC and other such installations. Information analysis centers have been established, but they are unfortunately not finding it easy to obtain adequate resources. The NASA technology utilization offices, and RSIC in its small way, have lived up to the spirit of the

COMPLEMENTARY TRANSFER MECHANISMS

- Selective dissemination of information
- Information and analysis centers
- Technology utilization offices
- International technical coordination programs
- Technical conferences and symposia

Weinberg Report. The international technical coordination programs and technical symposia, particularly the government-sponsored, have greatly increased in number, range, and influence.

The Army Materiel Command, our parent organization, has established and integrated several systems that provide good examples of organizationally encouraging, or even compelling, technology control and transfer. A group of ad hoc laboratory representatives (actually 40 in number) have been appointed within AMC's various laboratories and commands. They stay up-to-date on the tasks, status, and capabilities of their respective laboratories; keep abreast of system developments and advise and assist project managers; and form assistance teams as required. They know exactly where in DOD there is a capability to solve any specific problem a project manager might encounter. This is an excellent example of transferring technology.

As a corollary system, the Materiel Command consolidated and refined capabilities in major areas by establishing a Lead Laboratory for each area. This laboratory acts as field manager of its particular technology; it formulates and defends technology programs that may be conducted or shared by other laboratories; it receives and distributes program funds; it maintains the technology and assures results are made available to potential users. Briefings are given to General Miley twice a year by each lead laboratory. The Missile Command serves in this capacity for terminal homing/guidance and control and for the high energy laser, which is one of the most promising technologies to emerge in recent years.

Specialized reviewing mechanisms are another AMC innovation. A very good example is the Terminal Homing Data Bank established at RSIC. When it became evident that practically all future missile systems will use some type of terminal homing, it was decided the Army needed a focal point for real world data. All possible sources are being tapped for applicable data, and tactical assessment teams are observing and recording actual field effects to fill in the gaps. The computerized THDB acquires, analyzes, stores, retrieves, and disseminates bibliographic information on target signature measurements and measurements related data. Bibliographic summaries are sent monthly to a selected list of primarily Army but also Navy and Air Force users, and retrospective searches can be made on request.

Within the Missile Command there is the same emphasis on technology transfer. The technology base concept of management -- a solid foundation of technology maintained by research inputs through selected areas and drawn from by all weapon systems as applicable or needed -- has already been mentioned. Each area is represented by a functional element of the organization. Cutting across these lines is another management technique that increases assurance in the relevance and transfer of our technology efforts -- a group of what we call "advanced concept teams." Each relatively small team acts as an R&D project manager for a single

system concept, able to work directly with the in-house functional elements on any technical problems, but interfaced with the ultimate user, the Army Combat Developments Command.

One of the most valid grounds for criticism of the armed forces -- by Congress, Federal executive agencies, and the public -- is the duplication of research. Not finding and using technology already available or being developed by someone else is a waste of time, money, and people, and may seriously delay the completion of a weapon. Cross-checking within DOD and NASA has been made comparatively easy: through our direct on-line access to DDC and NASA information facilities we can request and receive research and technology resumes of on-going tasks in any area. These tasks are checked against planned in-house work for duplication or possible adoption. For the Independent Research and Development Program in industry, a special technology utilization system had to be devised. IR&D tasks are those supported by DOD but not sponsored by a contract or grant -- cost reimbursement is in the form of an overhead allowance. The IR&D data bank, established here at Redstone Scientific Information Center, collects, analyzes, and indexes brochures, or technical plans as they are now called, on all the tasks (currently about 8000) being performed by the participating contractors (total 126). Also maintained are fund allocations by technical area. The storage, retrieval, selective dissemination, and retrospective searches are completely automated. Our annual planning, programming, and budgeting cycle includes a check with the IR&D data bank to detect any unwarranted duplication in research and development; plans for duplication considered necessary must be justified. Information is also compiled for other DOD agencies and for DA and AMC management (internal planning, Congressional testimony, etc.). Of equal significance are the advantages derived from the technology itself. To date at least 10 of our missile system development programs have benefited by incorporating technology developed by industry in IR&D tasks.

The importance of this interchange of technical information, and consequently of contributing whatever we can to achieving such interchange, can best be illustrated by several examples. Pioneer work in the high energy laser aroused the interest of the National Institutes of Health, which saw possible medical application. In cooperation with the NIH we conducted a series of experiments, using our equipment and techniques, that resulted in the first known laser scalpel for human surgery. The use of lasers for joining retinas is a good example of such technology transfer.

The "smart bomb" began with laser semiactive guidance technology developed here at Redstone. The concept was not pursued by the Army at the time for "lack of targets for that type of application," but was recognized by the Air Force as having high potential for their needs. We contributed laser designators and illuminators to support the Air Force program, and have subsequently benefited from the technology they developed: the advances they made are being incorporated into one of our new weapon systems.

Propulsion is another area in which the Army made notable advances that found application throughout our armed services. The research and development of castable solid propellants, conducted in a Redstone laboratory, increased the maximum loading from 30 pounds (Air Force FALCON missile) to 5900 pounds, and made it possible to build the Army PERSHING, the Navy POLARIS, and the Air Force MINUTEMAN.

The local NASA facility came to our rescue when we were experiencing a problem with the LANCE propulsion system, which requires storable liquid propellants. The problem was solved by adapting the lox-compatible sealants and lubricants that NASA had already developed.

Without mechanisms for and interest in technology transfer, these and many other achievements would certainly have been much slower in coming and perhaps would not have been possible at all. We do not want to miss any similar opportunities. The Department of Defense laboratories and their information centers must be at the forefront in effecting the transfer of technology to meet materiel needs. And as information specialists we should take an activist approach -- become part of a whole scheme, know what is going on in our organizations, know what the immediate objectives and the long-range goals are, and take the initiative in devising ways to assist in their attainment.

TECHNOLOGY TRANSFER

Mr. Stanley Kalkus
Librarian, Naval Underwater Systems Center

Although there appear to be many definitions of technology transfer, the basic concept is always the same -- finding ways to get technology out of the laboratory and into industrial or governmental applications. It is also clear that so far technology transfer has not been as successful as we would like to see it. NASA pioneered the technology transfer concept, yet NASA's major de facto effort has been dissemination of technical information and not transfer of technology as was proposed.*

Since libraries were always included in dissemination of information, this aspect is not of interest in the present discussion. Rather it is the concept of technology transfer as formulated by many research groups which connotes person to person contact rather than traditional methods of information dissemination, and transfer of expertise rather than transfer of documents. It assumes that groups of experts in a given field, or possibly individuals working on special projects, will be made available by the existing organization to explain their methods or to introduce their technological advancements to other government laboratories or to industry.

Needless to say, in our DOD community the need for "involvement" is dictated by the shift in national priorities away from defense and toward the problems of society and the environment.**

The group decided that the discussion should center on the number one problem -- how do libraries, traditionally concerned with information transfer, fit into the new concept of technology transfer?

The discussion approached the question from every angle but always came back to information dissemination. It seems the only real technology transfer we could be involved in is that concerned with new methods or systems used by libraries and information centers. Other than that the library's responsibility is to provide better support to the individuals and groups involved in technology transfer. This poses two basic problems: (1) cooperation between libraries; and (2) the library's role in information transfer.

---

*Doctors, Samuel I. (see bibliography item 2).
**Keegan, John H. (see bibliography item 12).

As a general principle, of course, individual libraries should be actively and constantly aware of ongoing projects in their organizations and should establish strong collections in the primary subject fields. The cooperation among libraries could be improved in range and effectiveness through networks of libraries based on common interests or geographical location or a combination of both.

It was suggested that consideration be given to formulating a directory of libraries and information centers within DOD, giving name and location of the installation, the head librarian with mail and telephone contact information, and area or areas emphasized in each collection. Similar directories prepared in the past have usually been difficult to use, perhaps because they were arranged in order of library name. It is assumed that formulation of directories by region and service applications would be more practical, and could be the basis for developing library networks.

One very inclusive directory currently available to those with a DDC User Code is the Defense Documentation Center Referral Data Bank Directory. This publication lists specialized scientific and technical sources of information which have the capability of service to the defense community, supplementary to the documentation services of DDC. The sources, operated or supported by DOD and other government agencies, include information analysis centers and other information centers, data centers, information offices and libraries, laboratories and testing directorates, information exchanges, and audiovisual depositories. The entries are computer printouts which are kept current, and each printout gives for a single activity detailed descriptive information on the mission, subject areas, services and materials available, publications issued, and access limitations. These entries are arranged by referral accession number, but separate indexes by activity, director/contact, and subject are included. Request information is as follows:

DEFENSE DOCUMENTATION CENTER REFERRAL DATA BANK DIRECTORY
Report DDC-TR-71-6 (AD 724 700)
Alice L. Cox July 1971
request from (for those with User Code)
Defense Documentation Center
Cameron Station, Alexandria, Virginia 22314.

Barriers to information transfer in the DOD community are mostly present in the form of "need to know" and/or security classification. While there might be occasions when restrictions are needlessly applied, it is obvious that security measures have to be used.

Following are some suggestions and statements presented during the workshop:

(1) Interface is needed between the industrial community and DOD.

(2) DOD should not limit its services, but include nongovernment as well as government interaction.

(3) Librarians should work more closely with Information Scientists, incorporating IS into the library rather than vice-versa.

(4) Librarians need to take an active view of the need for information -- must know the problems to be solved.

(5) Librarians have let the Information Specialist run the show.

(6) Better communications should be established among libraries with similar missions and within geographical area.

(7) Expertise in subject areas should be exploited.

Provided below is a selected bibliography of works concerned with concepts, methods, and progress being made in transfer of technology.

SELECTED BIBLIOGRAPHY

Books

1. Carpenter, R.A.
   TECHNOLOGY ASSESSMENT AND THE CONGRESS.
   Praeger Publishers. 1972.
   (Discusses the role of the Congressional Search Service in supplying technical information.)

2. Doctors, Samuel I.
   THE NASA TECHNOLOGY TRANSFER PROGRAM: AN EVALUATION OF THE DISSEMINATION SYSTEM.
   Praeger Publishers. 1971.
   (Covers regional university-based dissemination center evaluation and comparison with other transfer mechanisms.)

3. Doctors, Samuel I.
   THE ROLE OF FEDERAL AGENCIES IN TECHNOLOGY TRANSFER.
   M.I.T. Press. 1969.

4. M.I.T. Conference on the Human Factor in the Transfer of Technology. Endicott House, 1966.
   FACTORS IN THE TRANSFER OF TECHNOLOGY.
   M.I.T. Press. 1969.

Documents

5. Air Force Office of Scientific Research, Arlington, Va.
INFORMATION ENTREPRENEURSHIP AND EDUCATION.... PRESCRIPTIONS FOR TECHNOLOGICAL CHANGE.
AD - 686 093.
Swanson, R.W. Mar 1969.
[Considers two interdependent vehicles for producing and promoting technological change: (1) Information handling, and (2) education.]

6. Defense Documentation Center, Alexandria, Va.
COST/BENEFITS OF TECHNICAL INFORMATION SERVICES AND TECHNOLOGY TRANSFER.
AD - 672 500.
Jul 1968.
(Compilation of literature existing in both the government and public sectors.)

7. Denver Research Inst., Colo.
PROJECT FOR THE ANALYSIS OF TECHNOLOGY TRANSFER -(PATT) (Quarterly Report 1 July - 31 Dec. 1970).
N71-30396.
Kottenstette, J.P. et al. 9 Mar 1971.
(A major program modification in the area of PATT transfer documentation is reported.)

8. Denver Research Inst., Colo. Industrial Economics Div.
TECHNOLOGY TRANSFER: A SELECTED BIBLIOGRAPHY
N71-20921.
Heller, S.T. et al. Feb 1971.
(This selective bibliography is concerned with technology transfer in the following sense: Technology is considered to be technical information and capability, including scientific knowledge, making possible the conception, development and design, production and distribution of foods and services..Transfer here means the movement of science or technology from one known place to another.)

9. National Aeronautics and Space Admin.
TECHNOLOGICAL DATA TRANSFER WITHIN THE MORRIS MACHINE WORKS COMPANY.
N70-21122.
Lawson, E. May 1969.

10. National Aeronautics and Space Admin., Langley Station, Va.
A BY-PRODUCT OF NASA: TRANSFER OF NEW TECHNOLOGY TO VARIOUS SECTORS OF THE ECONOMY.
N70-42711.
Whitlock, C.H. Apr 1970.
(Methods of technology transfer for both formal technical publications and other informal publications are examined.)

11. National Security Industrial Assn., Wash., D.C.
PROCEEDINGS OF THE TECHNICAL INFORMATION ADVISORY COMMITTEE.
AD - 716 542.
1969.
(Part I: Barriers to scientific and technical information for programs and products can be identified for progress. Part II: Barriers to scientific and technical information for programs and products can be overcome for progress.)

12. Naval Underwater Systems Center, Newport, R.I.
A FEASIBILITY STUDY OF DIVERSIFYING THE ACTIVITIES AND FUNCTIONS OF A DEFENSE RESEARCH AND DEVELOPMENT LABORATORY.
NUSC Rpt. No. 4245.
Keegan, John 30 Dec 1971.
[Includes (1) a study of a Defense Laboratory to determine the non-defense programs that the professional staff are interested in and capable of accomplishing, (2) a survey of Defense Laboratories to determine the degree to which they have diversified, and (3) a market survey.]

13. North Carolina Science and Technology Research Center, Durham.
QUARTERLY PROGRESS REPORT (16th) ON A REGIONAL TECHNOLOGY TRANSFER PROGRAM.
N68-88771.
16 Oct 1968.
(Seven cases of technology transfer and program are reported.)

14. Rand Corp., Santa Monica, Calif.
TECHNOLOGY TRANSFER MODEL.
AD - 731 271.
Bar-Zakay, S.N. Nov. 1970.
(Presents a model of technology transfer with these objectives in mind: to suggest a list of activities to be undertaken in a specified sequence by individuals and organizations intending to engage in technology transfer.)

15. Southeastern State College, Durent, Okla.
TECHNOLOGY UTILIZATION IN A NON-URBAN REGION: FURTHER IMPACT AND TECHNIQUE OF THE TECHNOLOGY USE STUDIES CENTER (Final Rpt.).
N70-37469.
May, 1970.
(Techniques employed in serving industrial clientele in a non-urban region are indentified along with description of library techniques and liaison operations with other agencies.)

Instructions (Navy)

16. -SECNAVINST 5700.14 of 28 February 1972 Subject: Military-Civilian Technology Transfer and Cooperative Development.

17. -OPNAVINST 5700.13 of 17 March 1972 Subject: Military-Civilian Technology Transfer and Cooperative Development.

18. -NAVMATINST 5700.2 of 6 June 1972 Subject: Military-Civilian Technology Transfer and Cooperative Development.

PROCUREMENT

Miss Mariana Thurber
Procurement Staff Specialist, TAGO, Department of the Army

The Procurement Workshop sessions were attended by 30 persons, representing research, academic, and general libraries.

Two activities currently in progress at the Federal level are dealing with the problems involved in purchasing library materials. The Commission on Government Procurement, set up by Congress in 1969, included procurement for libraries in its study which is scheduled for submission to Congress in late 1972. The Federal Library Committee's Task Force on Procurement Procedures has five subcommittees working to simplify procurement procedures. Because these two activities provide the best hope for regulatory changes, the group decided to omit discussion of the problems they are considering and to proceed instead to learning what practices librarians have found successful in problem areas.

Discussions of procurement actions which were difficult for some conferees and not for others eventually underlined the two basic requirements for relative success in procurement for libraries:

- Development of good working relationships with procurement personnel.

- Knowledge of the armed services procurement regulations that pertain to procurement for libraries.

Of these two, the first is of overriding importance. In every case where a conferee said procedures are working satisfactorily, a helpful and cooperative relationship exists with procurement personnel. Seeking advice on a friendly basis, plus acquiring some knowledge of the regulations that guide procurement officers, can be of considerable assistance to librarians in solving their procurement problems.

Specific recommendations formulated by the group were:

1. That the small purchase limit be raised from $250 to $2500 when the purchase is of printed, audiovisual, or microform materials for libraries.

2. That the $2500 limit per call under Blanket Purchase Agreements be eliminated, provided discount schedules have been established on a competitive basis with vendors.

3. That the dollar limit be increased from $2500 to $10,000 on orders other than Blanket Purchase Agreements.

4. That the ASPR and other appropriate regulations include a statement authorizing libraries to establish accounts with the Government Printing Office and the Library of Congress.

5. That procurement regulations be revised to allow automatic renewal options in periodical contracts, provided a periodic review of agency requirements and contractor performance is made.

6. That librarians in the Department of Defense should be conversant with the cost accounting requirements of Project PRIME, and plan all year-end procurements with these requirements in mind.

The group considered the desirability of designating the librarian as the contracting officer, and the possibility of a procurement course for librarians sponsored by GSA and the Civil Service Commission. The consensus was that librarians should be ordering officers or agents but not contracting officers. There was total agreement on the desirability of librarians taking courses in procurement, either special ones for librarians or the most suitable courses already available on government procurement. The aim of such training, however, should be to gain knowledge rather than to qualify for appointment as contracting officers.

POSITION DESCRIPTIONS

Miss Ingjerd O. Omdahl
Librarian, Special Services Division, First US Army

Following general introductions and outline of proposed activity for the work group sessions, the group was turned over to two representatives from Civilian Personnel Office, Redstone Arsenal: Mrs. Blanche Elrod, of Recruitment and Placement, and Miss Louise Parker, of Position and Pay Management.

A number of factors to be considered in evaluating positions and in writing position descriptions were noted. Some emphasis was placed on the need to go beneath the surface of job descriptions, which in many cases requires a thorough analysis to differentiate one position from another. The classifier must have a clear knowledge of, and the supervisor must be prepared to explain:

- What employee does.
- What knowledge is required.
- What is the reason for the job.
- What assistance is received from supervisor.
- What directions are received, both verbal and written.
- What type of review is made of the work performed.

Major and minor duties must be clearly indicated. As a rule of thumb, a major duty is one which consumes at least 25% of employee's time. Although position descriptions should be short, clear, and to the point, they must be sufficiently detailed to adequately describe the duties performed, the scope and complexity, and supervisory and employee relationships.

A lively discussion followed on the subject of downgrading of positions. The group was advised that when downgrading takes place, some of the higher level responsibilities must be removed in order to engineer the position down. If the responsibilities remain the same, the employee can appeal the classification.

Another question that elicited discussion was whether or not we may be moving more toward classifying the person rather than, or as well as, the job. The recommendations from the Job Evaluation and Pay Review Task Force (Oliver Report) would appear to support an affirmative answer. This task force and its recommendations were briefly reviewed.

Public Law 91-216, enacted 17 March 1970, required a two-year study leading to the preparation of a plan for the establishment of a coordinated system of job evaluation and ranking for civilian positions in the Executive Branch. To meet these requirements, a Job Evaluation and Pay Review Task Force was created within the US Civil Service Commission as an independent staff office reporting directly to the Commissioners.

One of the recommendations of the Task Force was that authority to evaluate positions be ultimately delegated to the manager of an organizational unit, probably the second line supervisor. In conjunction with this, the appeal procedure for assigned grades would start at the same supervisory level, i.e., if the second line supervisor assigns the grade, an appeal would be presented first to that supervisor.

The Task Force concluded that the factor ranking method with benchmark job descriptions and guide charts is the most effective method of job evaluation and one that best fits the need of the Federal Service. The factor ranking method requires a ranking of jobs by individual factor under the system in comparison with all other jobs. It supposedly provides accurate and consistent identification of skill levels and will produce valid and reliable job evaluations. The benchmark positions, which are sample descriptions of representative positions at various grade levels, serve as the key element under the system: they are the standards and guides for the evaluation of positions and for interpretation and application of the factor ranking scales. Positions were grouped into six broad categories:

(1) Administrative, Professional and Technological Evaluation System (APTES).

(2) Executive Evaluation System (EES).

(3) Clerical Office Machine Operation, and Technical Evaluation System (COMOT).

(4) Special Occupations Evaluation System (SOES).

(5) Coordinated Federal Wage System (CFWS).

(6) Supervisor and Manager Evaluation System (SAMES).

Apparently librarian positions will be rated under APTES. In both APTES and SOES the dual ladder concept for individual professional growth is strengthened. Under this concept, entrance-level personnel

in professional occupations will initially receive training and experience as individual workers, for example, in the librarian area, as reference librarians or catalogers. Some will choose a career ladder that will permit them to reach top skill levels as solo workers (in reference, cataloging, etc.). Others will select a career ladder involving progression to top skill levels as managers. Either plan will provide equal opportunities to reach the upper skill levels. Further, employees can swing back and forth between individual worker and supervisory positions with no loss in pay.

The final hour of the work session was spent on trying to develop detailed duty/task lists for the GS-1410, GS-1411, and GS-1412 series in an attempt to assist in the analysis of positions. Due to time limitation only a beginning was made, but may serve as an indication of the analysis of individual positions, as well as differentiations between the tasks in the various series, which each supervisor may have to do. It is important that only those tasks belonging in the GS-1411 series are reflected in the GS-1411 job descriptions and that the duties of the GS-1410 series are reflected in the GS-1410 job description.

Duties/Tasks	GS-1410	GS-1411
Selection/ Acquisition	Recommends and/or selects all materials. This involves evaluation, decision, and authority. Evaluation of collection for retention and removal. Responsibility to know available resources outside the library, i.e., individual experts, other library collections. Responsibility to know present, and plan for future, requirements. Screens and reviews materials. Knowledge of sources of materials. Knowledge of service procurement procedures. Training of staff.	Verifies bibliographic entries. Checks catalog and shelf list for holdings. Accounts maintenance. Maintains order files. Preparation of purchase requests. Receipt of books and verification of shipments as to correct title, edition, etc. Serials - order, renew, and maintain records. Typing.

Duties/Tasks	GS-1410	GS-1411
Classification & Cataloging	Analyzes contents of materials in relation to library collection and mission of agency. Assigns classification number and subject headings based on analysis and in accordance with established principles. Reviews work of technical processors. Establishes authority files. Decision for exceptions. Decision for implementation of established principles and theories. Designs, develops, and implements technical processes and control systems applicable to variant media and information requirements.	Adapts Library of Congress Cards. Routine descriptions. Added entries. Catalogs new editions. Adds serials. Performs simple cataloging, i.e., fiction and easy non-fiction. Files shelf list and catalog cards. Revises filing done by subordinate technicians. Trains new and/or lower ranking technicians. Updates manuals. Records for destruction of classified materials.
Bindery	Decides items for binding. Determines best binder.	Preparation of shipments. Binding specifications. Physical processing of the books. Verifies complete bibliographic volumes of periodicals. Checks in shipments from bindery.
Reference/Research/ Readers' Services	Interprets user requirements. Locates and selects sources to meet user requirements. Makes literature searches. Compiles bibliographies. Annotations.	Checks material in and out. Maintains control of overdues and reserves. Interlibrary loans. Shelves materials. Reads shelves. Clearances. Answers simple reference questions.

EMPLOYEE DEVELOPMENT*

Mr. Herbert Holzbauer
Library Director, Defense Intelligence Agency

SOME THOUGHTS ABOUT EMPLOYEE DEVELOPMENT

Herbert Holzbauer and Andre C. Whisenton

Most managers will loudly and vocally support the concept of employee development when asked specifically about it. Practically every command and agency has not one but several directives espousing the merits of employee development and specific on how to submit the necessary forms via the chain of command to obtain some type of training. Any member of the organization that has both a desire and a need for a particular aspect of training thus theoretically can submit a request. Although there are examples of successful programs for certain individual employees, the trouble with these approaches is that they are fragmented -- more often than not they are piecemeal, largely uncoordinated, and in many cases truly limited by being addressed to a small segment of the actual staff of any given organization. Further, the management requires tangible results, so that in most instances the justifications for training have to be completely job related. This requirement is understandable because training does involve resources and both time and money always have to be competed for: in the face of shrinking resources, most managers feel they must attempt to specifically relate the advantages and disadvantages of a particular training request, weighing the ultimate good to be gained from the training against the actual need.

The very fact that employee development seems interlocked with some aspect of formal training as a basic necessity is, to put it bluntly, an unwarranted and limiting constraint that ultimately may result in such negative causes as loss of creativity, lower morale, and loss of productivity. Management then seeks to correct these deficiencies somewhat belatedly and not always very effectively with employee development and training programs, such as upward mobility programs,, programs designed to meet limited management objectives, or any of a variety of other career employee training programs. Employee development should actually begin with the employee reporting on the job.

---

*This workshop session was not held because Mr. Holzbauer was unable to attend the conference, but he kindly provided the paper on this subject which is reproduced here.

All aspects of the employee's tasks, primary functions and areas of responsibilities should be integrated and coordinated in a flexible but semiformal program undersigned by the highest level of management and executed by all levels of supervisory cadre. Monitorship of the progress of each employee should not be left merely to the formality of an annual evaluation appraisal, but should be the prime responsibility of a true counseling career and guidance office armed with the necessary clout to execute and monitor the overall program. Each employee must have more than a chance to develop -- he is entitled to the right to develop to his fullest capacity.

This means that management must create a climate whereby an open and sincere partnership exists between the individual employee and the organization for which he works. Wherever possible the employee's personal goals -- his prime aspirations -- should be mated to the functional needs of the organization. The organization then has the responsibility in concert with the employee to provide various combinations of both formal and informal training, to include job enrichment, that will enable the employee to work towards the self-realization that is inherent in each individual. This is not in the realm of science fiction, nor is it the management style of the infinite future. More and more agencies are concerned with the employee "as a person" or "a whole" as opposed to a specific skill or function needed to be filled by hiring an individual for just that purpose. Many managers are also willing to concede some reward for high productivity which is generally related to initiative and motivation. Other agencies are experimenting by rotating their incoming employees over a period of time, thus affording both the employee and the manager an opportunity to see where the employee's interests, personal goals, skills and objectives best interface with the needs of the organization. These attempts are only the beginning phases since there are apparently only a few such enlightened current efforts. Mostly it is the "it's up to you" routine. Time is too precious doing the daily tasks and processing peak workloads to be overly concerned or to diffuse energy toward intangible and seemingly esoteric aspects of the inner needs of the individual.

Replete with detailed statistics and perpetual analysis, most managers are interested in producing more with less, with modernization and automation (much of which is highly desirable but still takes people to operate), and with the loss or reduction of real resources. Apparently managers, as a rule, cannot afford to be interested in the individual or his welfare per se. Perhaps a more enlightened approach on the part of administrators would alleviate and reduce in scope the very problems that seem to be constantly preoccupying their minds, namely productivity and costs. The individual employee, as it turns out, is still the organization's most valuable asset. There is just no way to get around it. Consequently, the more meaningful the work and the contribution made by the individual to the organization, the higher the motivation, creativity, and productivity of that employee.

Individuals do change. Change is the one constant. The organization changes, the structure changes, management changes, and the individual employee changes. Most managers, though cognitive of many aspects of changes through a variety of planning documents and aware that they themselves change, are generally unable to sense or appreciate the fact that the desires, needs, objectives and personal goals of their individual employees change. Rarely are these changes planned for or the necessary flexibility provided. Once in a while an employee is reassigned or even retrained. The reassignments are generally in accordance with some promotional opportunity and often stem from merit promotion certificates where candidates are internally interviewed. Complete retraining is a much rarer occurrence and may often be the result of necessity, such as from a reduction in force or the elimination of a particular function of an organization. Thus there are not many avenues open which in reality accommodate the ever-changing pattern of the individual. This is a great stymieing factor for the employee, equivalent to relegating him to a static rather than a dynamic environment and in some cases amounting to letting the individual "freeze" on the job.

Most employees are intelligent. This may be surprising to some administrators, but employees by and large are a sharp lot. They know when management is genuinely interested in them and when it is just paying lip service to their well-being. Each individual has a reasonably good idea of the true interest of his supervisor or his manager. Where there is a real, earnest concern that is mutually shared between the employee and management relating to the employee's welfare and development, the individual's whole work environment, morale, productivity, and initiative are generally on the rise. Equally important, the employee is generally at peace with himself and is able to be much more objective, flexible, and sympathetic to rapid needs for change. The organization as a unit thus benefits. Conversely, where there is ambiguity and doubt, misgivings may arise. These may stem from partial or inconsistent activities through which management relates or plans for the welfare and development of the individual employee. Negative factors tend to dominate and the resultant climate, though it may take several years of cumulation, may eventually have a severe impact on morale, quality of work, and productivity. It is clearly to management's advantage to maintain and fund a full-time, fully staffed employee development program that remains viable, modern, and resourceful. The returns in improved quality and output, at a noticeably reduced per unit cost, should be many times greater than the initial cost and maintenance investment.

As an example of what possible approaches are available in terms of a library environment, let us explore some aspects of the support staff normally associated with almost all types of libraries. The role of paraprofessionals in libraries is not a new issue. There have been numerous workshops and papers devoted to the subject, but the library profession has only recently given serious attention to the role and

duties, employment problems, and training of library technicians. The subsequent discussion will therefore specifically address the training and development of paraprofessionals.

Realizing that libraries today are facing budgetary restrictions and manpower shortages, the paraprofessional is very important in filling in the gaps. This is not to suggest that the paraprofessional can take the place of the trained professional librarian, but rather that the library technician can free the librarian to devote more time to truly professional chores.

Managers are faced with the problem of designing training programs for library technicians that are meaningful and appealing. Further pressed by organized groups of library technicians such as SOLIT (Society of Library and Information Technicians), the offering of associate degrees by numerous colleges, and the many federal grants being offered by the Office of Education on paraprofessional training, the manager is forced to initiate attractive programs in order to obtain as well as keep outstanding support staff. In designing a viable employee development program, the following steps must be taken before compiling the final proposal:

1) Make a survey of the profiles of the existing support staff. Consideration must be given to prior education, experience and potential of each paraprofessional.

2) Coordinate plans with top management and agency or institution personnel in order to gain final program approval. This could include inviting managers and personnel to the library for briefings on what is wanted and to show the need for such a developmental program. A package of professional literature covering the current trends and thoughts on the subject by the profession will help sell the library's position.

3) Make a survey of local educational facilities. Library managers should meet with local universities and colleges to discuss their needs and point out exactly what they want from the learning institutions.

The next step is to write the proposal. The proposal should include actual profiles of the staff, how and where it is desired they should move within the plan. The profiles help establish a firm showing with personnel departments. In writing the profiles, one should include a brief description of the job to be performed, responsibility level, and qualifications required. In other words, the profiles should be written as if they are job descriptions. A helpful tool to use is Job Description and Certification for Library Technical Assistants, edited by Noel R. Grego and Sister Mary Rudnik and published by the Council on Library Technology, 1970. The proposal should

include grade or step levels you want established in the library. It is wise to set the criteria for entry level, journeyman level, and senior level.

Much has been said about developing a career progression program for paraprofessionals. A program developed by the Defense Intelligence Agency library, designed along these guidelines, has proved to be workable. Through increased library courses -- at two local institutions as well as in-house -- and on-the-job training and experience, the paraprofessional can progress (one grade at a time) from Grade 5 up to Grade 8. Since the inception of this progression program in August 1971, almost half of the support staff members have merited promotion. In addition to gaining the promotions, the technicians now recognize they have a major role in the library operations. They know there is a planned program for them and they are taking advantage of it. The training provided by the courses and job rotation assignments do provide for a teamwork atmosphere, and are enabling the library to effectively handle additional assignments and increased workloads with less resources.

There is also, of course, equal concern about the professional librarian, but so many worthwhile studies have been made that it would be difficult to choose one example and impossible to review or comment on all of them. Instead, a briefly annotated bibliography of discussions of professional training is provided. Most citations refer to various aspects of training as it pertains to librarianship. There are numerous examples of other training opportunities both in and out of the Federal Government. The primary aim is to indicate that a vast concern for employee development does exist and that many corresponding studies, programs, and activities are available.

PROFESSIONAL TRAINING

A Select Bibliography

All countries in the world are concerned with the proper education and training of their librarians as masters of information sources. This bibliography attempts to indicate some of the thinking on the subject in the United States, and to suggest some future actions for the individuals interested in pursuing the leads into local universities, workshops, institutes, etc.

The major portion of this material has been culled from the catalog in the Information Science collection and the current issues of Library Literature. Many of the items have been examined and noted. The other citations are included as possible leads to further development of the subject.

The citations are arranged under the following headings:

GENERAL DISCUSSIONS

TRAINING in Libraries

in Library Schools

in Federal Government Departments

in Associations, Societies, etc.

in Universities

in Workshops

in Manuals.

GENERAL DISCUSSIONS

American Library Association

LIBRARY EDUCATION & MANPOWER
In American Libraries 1970 April pp. 341-344
reprint

... provides guidance in the establishment of library duties at the various levels ... discusses appropriate education & training at the various job levels ... notes that future libraries will require personnel of more varied backgrounds & aptitudes than now accepted by library administrators ... details some of the thinking for technician, graduate, post graduate & continuing education for librarians.

4A3 HH 4.W.

American Library Association. Library Education Division

CONTINUING EDUCATION FOR LIBRARIANS - Conferences, Workshops, Short Courses -- 1972
In American Libraries 1971 December pp. 1217-1219

... brief outline chart arranged by state, indicating date, instructor, place, sponsor, tuition charge, audience, person to contact for each event ... if this is continued each year, it should prove helpful to all staff members ... except those in DC which is not listed ...

American Society for Training & Development

TRAINING & DEVELOPMENT JOURNAL includes TRAINING RESEARCH ABSTRACTS (monthly)
1945 -- $ 12.50
Fairfield, Conn.

... discusses the training problems & on-going research in governmental, military & industrial organizations ...

4A3 HH 4.S.(mentioned) Ulrich's '71

Asheim, Lester E.

EDUCATION & MANPOWER FOR LIBRARIANSHIP * FIRST STEPS TOWARD A STATEMENT OF POLICY
In ALA Bulletin 1968 October pp. 1096-1106
reprint

... as a noted authority in the field of training, the author again points to the need for recognition of the many roles for which librarians should be prepared ... presents his arguments in a useful chart with discussion ... stresses the urgency for adequate preparation in the subject areas encompassed by the library's mission ...

4A3 HH 4.S.

Asheim, L. E.

PREPARATION & USE OF LIBRARY MANPOWER
In Medical Library Association Bulletin 1972 April
#60 pp. 288-291

... surveys the general trends in library education & utilization of manpower with special reference to the official "ALA Policy on Library Education & Manpower" approved in July 1970 ... key concept of the Policy is that the demands of the position should be the test of professional quality, & not the diploma held by the applicant ... thus leading to improved quality of library service ...

Bracken, Marilyn C. & Shilling, Charles W.

SURVEY OF PRACTICAL TRAINING IN INFORMATION SCIENCE
In American Documentation 1968 April pp. 113-119
reprint

... as a result of questionnaires sent to various schools, presents some summaries in chart form & in text ... course titles are listed & suggest some areas for further study ...

4A3 HH 4.S.3.

Civil Service Publishing Corp.

HOW TO PASS DEPARTMENT LIBRARIAN SENIOR DEPARTMENT LIBRARIAN - Questions & Answers to Examinations
1966
Brooklyn, NY
50 p.

... prepared for home study ... gives many useful hints for facing the important exam ... presents actual test questions ... presents brief review of library fundamentals ...

4A3 Z668.3.C581

Davis, Richard Aiban

CONTINUING EDUCATION
19 ?
Philadelphia; Drexel University, Graduate School of Library Science
9 p.

... good introduction to the entire problem of advancing the education of library school graduates ... presents the idea of the education officer and what he might do to assist ...

4A3 HH 4.S.

Kyle, R. J.

EDUCATION OF INFORMATION PERSONNEL
In Journal of Chemical Documentation 1962 October
v.2 #4 pp. 204-206
reprint

... the chemical field has long recognized the need for special short course training of library personnel, for the encouragement of degree programs for those who can qualify & for in-service training - all necessary activities to improve service in specialized fields ...

4A3 HH 4.S.

Piquard, Maurice

TRAINING OF LIBRARIANS IN EUROPE
In Unesco Bulletin 1967 November/December pp. 311-317
reprint

10A3 HH 6.G.

Rayward, W. B.

NEW TECHNOLOGY & EDUCATION FOR LIBRARIANSHIP
In Australian Library Journal 1971 June #20 pp. 12-15

Shaffer, Dale E.

MATURITY OF LIBRARIANSHIP as a PROFESSION
1968
Metuchen, N.J.; Scarecrow Press, Inc.
166 p.

... stresses the importance of understanding the theories behind the skills & techniques necessary for library service, & points out the importance of professional education, attendance in technical & professional schools, & years of internship for developing experience.

4A3 Z682.S52

Snyder, Patt

CAREER PLANNING
In Special Libraries 1972 July pp. 310-312

... makes several suggestions on how to focus one's energies to the achievement of one's goals ... by joining, by continuing education, by moving & shifting ...

Stokes, Roy

TRADING STAMP MENTALITY - from across the Atlantic, a critical view of American Library Education
In Library Journal 1967 October 15 pp. 3595-3600

... a critical evaluation of the American pressure for degrees without sufficient benefits from the school subjects or practical library experience ... interesting point of view ...

4A3 HH 4.S.

Stone, Elizabeth W.

FACTORS RELATED TO THE PROFESSIONAL DEVELOPMENT OF LIBRARIANS
1969
Metuchen, N.J.; Scarecrow Press
281 p.

... attempts to identify some of the factors that motivate librarians to continue their professional development ... & point out those that discourage ... gives guidance in the development of questionnaires ... analysis returns & indicates trends ...

4A3 Z682.S87

Stone, Elizabeth W.

QUEST FOR EXPERTISE - librarians' responsibility
In College & Research Libraries 1971 November v. 32 #6 pp. 432-441

... presents some thought provoking ideas on how individuals react to learning more, what they hope to gain by increasing their knowledge ... lists some possible actions for personal growth ...

4A3 period.

TRAINING
- in Libraries

American Library Association. Library Administration Division. Personnel Administration Section.

PERSONNEL ORGANIZATION & PROCEDURE
1968
Chicago; ALA
59 p.

... Chapter 7 stresses in-service training, encouragement of further education, professional reading, activities & affiliations for development of the staff ... some of these suggestions might be helpful ...

4A3 Z682.A5111

Catholic University of America

CONTINUING EDUCATION COURSES TO MEET YOUR ON-THE-JOB NEEDS
1971/72 --
Washington, DC
2 p.

... brief outline of planned courses - suggesting yearly check on proposed course plan for future semesters ...

4A3 HH 4.T.

Harrison, K. C.

STAFF TRAINING IN LARGE CITY LIBRARIES
In International Library Review 1969 October
pp. 475-478

Mack, E.

INFORMATION STAFF TRAINING
In Information Scientist 1972 June pp. 51-59

Proctor, John H. & Thornton, William M.

TRAINING - HANDBOOKS FOR LINE MANAGERS
1961
New York; American Management Association
224 p.

4A3 HF5549.P96

Sollerberger, Judith K.

IN-SERVICE TRAINING - bibliographical essay
1965
Chicago; American Library Association
25 p.

... covers literature since 1955 under discussion for philosophy of instruction, methods of training, orientation of new employees, job instruction, supervisory tasks, administrative techniques, professional development, internships, special areas of service, etc. with footnote designation to appropriate bibliographic citation.

4A3 Z668.S68

Stone, Elizabeth W. ed.

NEW DIRECTIONS IN STAFF DEVELOPMENT ... papers
1971
Chicago; American Library Association
66 p.

... presents ideas from a Staff Development workshop held in June 1970 ... emphasizing continued education in libraries with gained experience in-house participation ...

4A3 Z682.M621

Wallace, Everett M. & others

ON-THE-JOB TRAINING OF LIBRARY PERSONNEL
1968 TM-3962/000/00 AD-680-778
Santa Monica, Cal.; System Development Corporation
31 p.

... guidance for the design, development, testing & evaluation of instructional packages especially for sci/tech library personnel both professional & non-professional ... each modular lesson unit is designed for one half hour period of study ... exploiting several media (videotape, sound & slides, conventional papers) ... this report is the first part of the series ...

4A3 HH 4.T.

Wallace, Everett M. & others

PLANNING FOR ON-THE-JOB TRAINING OF LIBRARY PERSONNEL
1968 March 1 AD-680-779
Santa Monica, Cal.; System Development Corporation
28 p.

... brief survey of the entire project, with concentration on: reference tools & procedures, foreign & technical terminology, applications of modern technology in libraries, ... using trainee-directed self-testing & study approach following suggestions designed into prescribed packages ...

4A3 HH 4.T.

TRAINING
- in Library Schools

American Library Association. Committee on Accreditation.

GRADUATE LIBRARY SCHOOL PROGRAMS ACCREDITED ...
1972 August semi-annual gratis
Chicago, ALA
2 p.

(Continued)

... lists name & address of each library school offering doctoral & post-master's specialist or certificate programs in library science ...

4A3 HH 4.T.

Asheim, Lester

EDUCATION FOR LIBRARIANSHIP IN THE UNITED STATES - some problems & challenges
In Australian Library Journal 1969 December pp. 401-6

... brief summary of the situation indicative of the state of confusion & change that is taking place in library school curriculum emphasis ... stresses the need for full rounded general college level education before entering the field of Library & Information Science with hopefully, pretty good background in some subject discipline to which library thinking can be applied ...

Association of American Library Schools

DIRECTORY - ACCREDITED LIBRARY SCHOOLS, FACULTIES, & COURSES 1969/70
In Journal of Education for Librarianship 1970 Winter v. 10 #3 pp. 166-250

... appears annually with entries in three lists ... by name of school, by faculty, by subject specialty ...

4A3 Z668.J86

Boll, J. J.

BASIS FOR LIBRARY EDUCATION
In Library Quarterly 1972 April #42 pp. 195-211

... thought provoking analysis of future direction for formal library education based on national needs ... perhaps favoring the split of study into functional clusters instead of the standard divisions by type of library ...

Bone, Larry Earl ed.

LIBRARY EDUCATION - an International Survey
1968
Champaign; University of Illinois, Graduate School of Library Science
388 p.

... describes the history & present status of education for librarianship in U.S., Canada, Latin America, Europe,

(Continued)

& Gt.Britain ... gives details on organization, operation, & accreditation of library schools ... delves into teaching methods, practice work & its importance, curricula development, advanced study programs & library research ...

4A3 Z668.I61

Carpenter, R. L. & Carpenter, P. A.

DOCTORATE IN LIBRARIANSHIP & AN ASSESSMENT OF GRADUATE LIBRARY EDUCATION
In Journal of Education for Librarianship 1970 Summer #11 pp. 3-45

Danton, J. Periam

BETWEEN M.S.L. & Ph.D. - study of sixth-year specialist programs in accredited library schools
1970
Chicago, American Library Association
103 p.

4A3 Z668.D19

Duchac, Kenneth F.

MANPOWER - a Proposal
In Library Journal 1967 May 1 pp. 1797-1798

... presents some interesting ideas that should promote better library school courses, more oriented toward the needs of the library administrators ... recognizes the need for professionals trained in other disciplines but essential to administrative library positions i.e. systems analysis, data processing, personal & public relations & considerably more attention to subject specialization ... also stresses advantages of in-service training ... graduate level training should be concerned with theory, long-range goals, management, research, etc. ...

Elliott, C. A.

LIBRARY SCIENCE AS LIBERAL EDUCATION
In American Libraries 1971 March v. 2 pp. 236-237

... written by the assistant professor of library science at Simmons College, Boston, the article presents an idea for shifting the emphasis from ALA or AALS accreditation of library schools to evaluation by a strong practicing professional group of librarians themselves better able to push for adequate training & preparation ...

Flood, B.

SOME THOUGHTS ON GRADUATE EDUCATION IN LIBRARIANSHIP
In Journal of Education for Librarianship 1971 Fall
#12 pp. 133-137

Hayes, Robert M.

ROLE OF INFORMATION SCIENCE IN LIBRARY EDUCATION
In Ibid
Handbook of Data Processing for Libraries
1970 pp. 770-785

... indicates the special needs of information science & shows how inadequate the present library school training is for handling these problems ... stresses the important curriculum elements necessary to meet the problem ... with lists, charts, & suggested readings ...

4A3 Z678.9.H41

Kortendick, James & Stone, Elizabeth

JOB DIMENSIONS & EDUCATIONAL NEEDS IN LIBRARIANSHIP
1971
Chicago; American Library Association
503 p.

... based on study of federal & other libraries, answering basic questionnaires ... presents their requests for courses, workshops, etc. ... gives hints on the building of a training program based on library education needs at the post-master's degree level ...

4A3 Z668.K85

Miller, Edward P. & Lutz, Raymond P.

UNIQUE PROGRAM IN LIBRARY EDUCATION
In Special Libraries 1971 September pp. 353-356

... University of Oklahoma has established an interdisciplinary program that combines the Schools of Industrial Engineering & Library Science ... thus relating techniques of industrial planning & management to libraries systems ...

Olson, Edwin E. & others

EDUCATIONAL MODEL FOR LIBRARY PROBLEM-SOLVING - teaming librarians, students & faculty
In Special Libraries 1972 May/June pp. 231-234

(Continued)

... cooperative agreements between large libraries & nearby library schools can often lead to good experience in practical problem solving by applying analytical concepts & methods & actual everyday materials ...

Rees, Alan M. & Riccio, Dorothy

INFORMATION SCIENCE IN LIBRARY SCHOOL CURRICULA
1967 ?
Cleveland; Western Reserve University, School of Library Science
15 p.

... more discussion of theory as to what & how librarians should be instructed ... does present an interesting summary of types of instruction from various library schools & could serve as possible suggestions ...

4A3 HH 4.T.

Reynolds, Michael M.

COMMENTARY ON EDUCATION FOR SPECIAL LIBRARIANSHIP
In Special Libraries 1971 March pp. 125-128

... librarianship & information science have become such all encompassing fields of knowledge that no one person or school can possibly learn or teach all that is required ... author believes that special librarianship may be in need of its own special schools, with specialized curriculum with emphasis on librarian involvement with users in the environmental context of their needs ...

Sabor, Josefa E.

METHODS OF TEACHING LIBRARIANSHIP
1969
Paris; Unesco
145 p.

... attempts to assist the teacher of library science as a methodical guide to improving educational methods to the outlining of lessons, the presentation of material, the guiding of discussions, etc.

4A3 Z668.S11

Schur, H. & Saunders, W. L.

EDUCATION & TRAINING FOR SCIENTIFIC & TECHNOLOGICAL LIBRARY & INFORMATION WORK
1968
London, HMSO
79 p.

(Continued)

... prepared as a special study by Postgraduate School of Librarianship & Information Science, Sheffield University ... to underline the educational requirements for libraries & information departments ... discusses the future development of graduate professional, post-graduate professionals & advanced professionals ...

4A3 HH 4.T.

Summers, F. W.

TWO DECISIVE DECADES - EMERGENCE OF LIBRARY EDUCATION
In American Libraries 1972 July v. 3 pp. 791-794

... gives historical background to the development of formal library education ... indicates that the future holds some basic changes, among which will appear greater emphasis on the student's own specialized interests with less development for general library education ... theory & ability to plan & execute new systems & new services will be the future goal ...

System Development Corporation. Library Service Center

USING AUTOMATED LIBRARY PROCESSING SERVICES in LIBRARY & INFORMATION SCIENCE COURSES
1972 ?
Santa Monica, Cal. ?
4 p.

... presents some interesting ideas as to how computer tapes could assist library schools in the teaching of cataloguing, acquisitions, library administration, systems analysis, etc. other subject fields ...

4A3 HH 4.S.3.

Taylor, Robert S.

CURRICULUM DEVELOPMENT IN DOCUMENTATION & THE INFORMATION SCIENCES
1969 ?
Bethlehem, Pa.; Lehigh University, Center for Information Sciences
pp. 31-37

... discusses formal graduate curricula on the Master's level ... for three basic personnel levels - subject information specialists/special librarians, system designers, information scientists, each requiring different training programs ... course titles given ...

4A3 HH 4.T.

Universidad de Buenos Aires. Institute Bibliotecologico

GUIA DE ESCUELAS Y CURSOS DE BIBLIOTECOLOGIA Y DOCUMENTACION EN AMERICA LATINA - pt. 1 Argentina
(Guide of Library Schools Courses in Library Science & Documentation in Latin America)
Buenos Aires
1972
34 p.

... could be useful for list of subjects (library & supporting subject areas) being offered to interested students ...

4A3 Z669.5.L3.B921

Wendt, Paul

NEW LIBRARY MATERIALS & TECHNOLOGY FOR INSTRUCTION & RESEARCH
In Library Trends 1967 October pp. 197-210
reprint

... stresses the importance of introducing some of the newer methods of teaching - visual aids, computers, microforms, sound equipment, etc. to assist library schools in handling larger enrollments in more efficient manner ...

4A3 HH 4.S.

Wilkie, Lorna C. ed.

DIRECTORY OF EDUCATIONAL PROGRAMS IN INFORMATION SCIENCE 1971/72 1st. ed.
Washington, DC; American Society for Information Science
105 p.

... lists over 91 graduate-level academic programs in US & Canada ... covering library & information systems, library automation & networks, systems analysis, management information systems, information needs & uses, abstracting & indexing, advanced classification theory, etc. ... excludes basic library science programs & basic computer programs ...

4A3 HH 4.T.

TRAINING
- in Federal Government Departments

Charen, Thelma

MEDLARS TRAINING PROGRAM - MEDLINE TRAINING SYLLABUS
1972 PB-207-177
Bethesda, Md.; National Library of Medicine
233 p.

... detailed syllabus helpful as a reference tool for the course & following its completion ... introduces the special vocabulary, the input principles & search/ retrieval practices to encourage maximum efficiency ...

4A3 HH 4.S.3.

Hamblen, John W.

COMPUTER SCIENCES & RELATED DEGREE PROGRAMS
In Inventory of Computers in US Higher Education ... 1970 Washington, DC; National Science Foundation Chapter V

4A3 HH 4.T. ASIS-Dir.

Kortendick, James J. & Stone, Elizabeth W.

HIGHLIGHTS OF A STUDY ON FEDERAL LIBRARIANS & POST MASTER IN LIBRARY SCIENCE EDUCATION - prelim. rept.
In D.C. Libraries 1969 Fall pp. 71-76 v. 40 #4 reprint

... explains the necessity for a detailed study, of federal librarians & their intellectual needs ... highlights some of the findings from a computer analysis of the questionnaires received from a representative body of graduates ... lists some of the subjects in most demand (p. 74) both within & outside the field of library science ...

10A3 HH 4.S.1.

US Civil Service Commission. Bureau of Training
19th & "E" Sts. NW Washington, DC

1972 info:

... there are six special training centers with courses given thru-out the metropolitan area wherever space can be made available ... curriculum covers personnel management, management science, ADP, communications & office skills, etc. ...

US Civil Service Commission. Bureau of Training.

INTERAGENCY TRAINING PROGRAMS - 1970/71
In FLC Newsletter Appendix 1970 October

... lists courses available to clientele in the Washington area ... gives description of course, states who may attend, how to make nominations, other necessary information ...

4A3 HH 4.S.

US Defense Intelligence Agency. PM-3

CAREER DEVELOPMENT ...
1972
Washington, DC

... phone for information or visit & study brochures in the Cafritz Bldg. near the Pentagon. ... x51171 ... there are many opportunities for training in this Agency, within Dept. of Defense, in local universities, etc. ... specialists in management, military affairs, computers, clerical, etc. study opportunities are on-hand for guidance & curriculum planning ...

U.S. Defense Intelligence Agency

INFORMATION SCIENCE CENTER
In DIALogue 1970 March v. 3 #2 pp. 1-3
reprint

... course plan of the Defense Intelligence School for teaching information science ... program was discontinued for 1972 --

4A3 HH 4.S.

US Department of Agriculture. Graduate School.
Independence Ave. & 14th Sts. SW Washington, DC

1972 --

... offers course is a variety of disciplines in evening & special daytime programs ... available to government & non-government employees who can qualify with the appropriate prerequisites ...

U.S. Department of Defense. Computer Institute.

CURRICULUM ... INTRODUCTION TO COMPUTER TECHNOLOGY
1969 --
Washington, DC
2 v.

... outline of courses presented with notes ...

4A3 HH 4.S.3.

US Department of Defense Computer Institute

TRAINING COURSE MANUALS
1970
Washington, DC
2 v.

4A3 HH 4.S.3.

US Dept. of the Air Force

TRAINING - AUTOMATIC DATA PROCESSING ORIENTATION
1968 May 29 AFP-50-45
Washington, DC; Gov't. Print. Off.
50 p.

... with statements, questions & answers, attempts to introduce the electronic data processing systems, the automatic data processing elements, computer programs & flow charts & automated data systems ... useful, easily understood reference work ...

4A3 HH 4.S.

U.S. Dept. of the Army

ARMY INFORMATION & DATA SYSTEMS - Automatic Data Processing Training for Military & Civilian Personnel
1968 March TB-18-8
Washington, DC
48 p.

... describes courses offered by army schools, other government & non-government agencies ... visual aids available, etc. ... gives course title, training facility, scope of subject, who may attend, class size, etc. ...

4A3 HH 4.S.

US Dept. of the Army. Education Center.

LANGUAGE LABORATORY
1972
Ft. Myer, Va.

... offers courses to military & non-military government employees for special training ... call x70608 for course offerings ...

US Dept. of Health Education & Welfare. Office of Education

ELECTRONIC DATA PROCESSING - I
a suggested two year post high school curriculum for computer programmers & business application analysts
1963 OE-80024 Tech. Educ. Progr. #4
Washington, DC
49 p.

... course outlines, references, etc. might be suggestive ...

4A3 HH 4.S.

US Foreign Services Institute Language School
Dept. of State
Rosselyn, Arlington, Va.

... offers courses to students in other government agencies daily from 7:30-8:30 a.m. in over 60 languages ... necessary to reserve space, because classes are crowded ...

US Library of Congress. Training Office
Washington, DC

1972 --

... current training officer is Mr. Joiner (x426-6348) who arranges courses for new employees of the library all the way from introductory to supervision & management, either by in-house internship or attendance at schools in the Washington area ... LC is not funded at this time to absorb students from other government agencies since it now has only two persons on the training staff ...

US Library of Congress. Information Systems Office

AUTOMATION TRAINING PROGRAM - Technical Briefing on Customer Information Control System & Computers ...
1972 --
Washington, DC

(Continued)

... this & other courses are offered to introduce new technical capabilities ...

LC Info. Bull. '72 Oct. 27 p. 464

US National Security Agency

Proceedings of INVITATIONAL WORKSHOP ON NETWORK OF COMPUTERS at College Park, Md.
1970 October AD-736-245
Springfield, Va.; National Technical Information Service
178 p.

4A3 HH 2.X.

Wiley Systems, Inc.
PROFESSIONAL DEVELOPMENT SERIES - 1972 - six seminars
1972 June
Washington, DC
8 p.

... brief suggestion of courses offered by a private enterprise to government employees ... cover subjects in system design, system analysis, & management of EDP projects ...

4A3 HH 4.S. pt.1

TRAINING
- in Associations, Societies, Institutes

American Library Association. Office for Library Education.

Established in 1967 with Lester Asheim as Director, with responsibility for coordinating, rationalizing, & stimulating, the many & diverse activities of the association that have a bearing on education for librarians ... coordinates all activities with the Library Education Division of ALA with Agnes Reagan Executive Secretary ... the Office is concerned with formal educational programs, with undergraduate programs, with sixth-year Post-Master's programs, doctoral & technical training, continuing education, in-service training, etc. ...

D.C. Libr. '67 Fall p. 67-69 Asheim, L. "View from ALA..."

Association for Computing Machinery

ACM PROFESSIONAL DEVELOPMENT SEMINAR SCHEDULE
1971 Fall
New York
18 p.

4A3 HH 1.N.

Georgia Institute of Technology. School of Information & Computer Science
Atlanta, Georgia

1972 --

... offers comprehensive programs of education, research & service in the information, computer & systems sciences ... operates under a grant from the National Science Foundation with an interdisciplinary science information research center ...

4A3 HH 1.E.

International Federation for Documentation

INTERNATIONAL CONFERENCE ON EDUCATION FOR SCIENTIFIC INFORMATION WORK ...
1967 FID #422
Hague; Federation Internationale de Documentation
270 p.

10A3 Z699.I61

International Federation of Information Processing

BIBLIOGRAPHY OF COMPUTER EDUCATION
1970
Amsterdam, Netherlands Centre for Informatics
? p.

FID Newsletter '70
Aug. 15 p. 99

Knight, G. Norman

TRAINING IN INDEXING - course of the Society of Indexers
1969
Cambridge; Massachusetts Institute of Technology
219 p.

4A3 Z695.9.K71

Special Libraries Association
235 Park Ave. South, New York

1972 --

... awards scholarships to qualified recipients for graduate study in librarianship leading to a master's degree in library or information science ...

4A3 period. Special Libraries '72 July p. 356 & other issues

TRAINING
- in Universities

American University
Massachusetts & Nebraska Ave. NW Washington, DC

1972 --

... request information from the Admissions office ... courses offered in: anthropology, art, biology, business administration, data processing, education, economics, foreign area studies, government & public administration, history, linguistics, mathematics, nursing, philosophy & religion, physics, psychology, & sociology ...

American University. Center for Technology & Administration

MASTER OF SCIENCE IN TECHNOLOGY OF MANAGEMENT
1971 ?
Washington, DC
18 p.

... computer systems, operations research, sci/tech information systems, MIS, research & development management, etc. ... gives detailed descriptions of subjects covered, advises students ... suggests obtaining more updated list of offerings ...

4A3 HH 4.T.

Catholic University
620 Michigan Avenue NE Washington, DC

1972 --

... request information from the Admissions office ... courses offered in: arts & science, education, engineering & architecture, law, nursing, library science, philosophy, theology, etc. ...

Catholic University of America. Department of Library Science

APPLICATION OF COMPUTER TECHNOLOGY TO LIBRARY PROCESSES -
1973
Washington, DC

... post M.L.S. course to be offered for Spring semester, as 3 credit hours ...

District of Columbia Library Assoc. INTERCOM '72 Nov. p.9

Catholic University of America. Department of Library Science

HUMAN RESOURCES IN THE LIBRARY SYSTEM -
1973
Washington, DC

... post M.L.S. course to be offered for Spring semester, as 3 credit hours ...

District of Columbia Library Assoc. INTERCOM '72 Nov. p.9

Cornell University. Libraries

Report of the COMMITTEE ON CONTINUING EDUCATION & PROFESSIONAL GROWTH
1969 August ED-056-718
Ithaca, N.Y.
51 p.

4A3 HH 4.T.

George Mason University
4400 University Drive, Fairfax, Virginia

1972 --

... request information from the Admissions office ... courses offered in: behavior sciences, business administration, arts & sciences, education, foreign languages, history, humanities, mathematics, physics, etc. ...

George Washington University
2121 "I" St. NW Washington, DC

1972 --

... request information from the Admissions office ... courses offered in: general studies, arts & science, education, engineering & applied sciences, government & business administration, law, & management ...

Georgetown University
37th & "O" St. NW Washington, DC

1972 --

... request information from the Admissions office ... courses offered in: arts & science, business administration, population, strategic & international studies, economics, education & psychology, foreign service techniques, history, language & linguistics, & mathematics ...

Howard University
2400 Sixth St. NW Washington, DC

1972 --

... request information from the Admissions office ... courses offered in: architecture, business, public administration, city & regional planning, communication, education, engineering, law, pharmacy, medicine, dentistry, & social work ...

Kennedy, H. Robert

GRADUATE STUDY IN INFORMATION SCIENCE at American University
In DIAAP Journal of Intelligence 1969 July
reprint

4A3 HH 4.S.

Rees, Alan M. & Saracevic, Tefko

TEACHING OF DOCUMENTATION AT WESTERN RESERVE UNIVERSITY
1964
Cleveland; Western Reserve University
8 p.

... gives few ideas on how to organize the subject ... has brief bibliography ...

4A3 HH 4.S.

Rutgers University. Graduate School of Library Science

PROGRAM IN GRADUATE LIBRARY EDUCATION leading to Master of Library Service & Doctor of Library Science as well as educational & service programs to meet the continuing educational needs of the practicing librarians.

New Brunswick, NJ

... brief statements ... write for more information ...

4A3 HH 4.T.

University of Denver. Graduate School of Librarianship.

OFFERS NEW SIXTH YEAR PROGRAM - to holders of accredited degrees, with individually tailored programs in administration, information science or subject specialization ...
In Library Journal 1970 September 15 p. 2866
reprint

4A3 HH 4.T.

University of Maryland
College Park, Md.

1972 --

... request information from the Admissions office ... courses offered in: agriculture, architecture, arts & sciences, business & public administration, computer sciences, education, engineering, human ecology, library & information services, nursing, pharmacy, etc. ...

University of Michigan. School of Library Science.

UNIVERSITY OF MICHIGAN BULLETIN
1971/72 - 1972/73
Ann Arbor
48 p.

... altho not immediately accessible to interested librarians in this area, might be studied for course title suggestions which could be picked up locally or studied thru personal readings ...

4A3 HH 4.T.

TRAINING
- in Workshops

Catholic University of America. Department of Library Science

LIBRARY CAREER DEVELOPMENT INSTITUTE
In Library of Congress Information Bulletin
1971 June 3 v. 30 #22 p. 324

... brief note explaining the extent of the Institute program funded under Title II-B of the "Higher Education Act" aimed at increasing the profession competencies of selected individuals ... altho too old to assist in today's problem, it serves as an example for possible learning & growth ... other opportunities may arise for the alert staff member ...

Crosland, Dorothy M.

SCIENCE INFORMATION SPECIALISTS - Proceedings of the Conferences on Training at Georgia Tech ...
1962
Washington, DC; National Science Foundation
139 p.

... report details some of the special needs of science librarians, technical literature analysis, information scientists & describes the special offerings of library schools & universities for in-service training, under & graduate programs - Appendix 2 ...

4A3 HH 4.S.

Dyson, S. A.

PLANNING A LIBRARY INSTITUTE (Workshop)
In Louisiana Library Association Bulletin
1971 Summer #34 pp. 41-48

GEOGRAPHIC ROSTERS OF ORGANIZATIONS OFFERING COURSES, TRAINING, OR INSTRUCTION IN COMPUTING, PROGRAMMING, OR SYSTEMS
In Computer Directory & Buyers' Guide 1970 p. 143

4A3 HH 2.W.

General Electric Company

HUMAN FACTORS & TRAINING AT THE INFORMATION SYSTEMS OPERATION
1963
Washington, DC
32 p.

4A3 Z699.G32

Goldwyn, A. J. & Rees, Alan M. eds.

EDUCATION OF SCIENCE INFORMATION PERSONNEL - Proceedings of 1964 Invitational Conference
1965
Dayton; Western Reserve University, School of Library Science, Center for Documentation & Communications
115 p.

... presents actual arguments for developing library school curriculi based on practical working needs of library & information science specialists ... describes some of the courses offered from various library schools in US & Canada ...

4A3 HH 4.S.

Lieberman, Irving ed.

PROCEEDINGS OF AN INVITATIONAL CONFERENCE ON EDUCATION FOR HEALTH SCIENCES LIBRARIANSHIP
1968
Seattle; University of Washington, School of Librarianship
216 p.

... discusses curriculum content for education in medical librarianship, educational programs for health science librarians, systems concepts & library education, with an Appendix B on the "Education & Training in the Veterans Administration Library Program" ...

4A3 HH 4.S.1.

Special Libraries Association

WORKSHOP for the EDUCATION OF THE INFORMATION SPECIALIST
1972 convention handout
Boston, SLA
1 p.

... presents an outline of topics discussed: Computers, SDI Tapes & Services, Profiling; ... suggestive of the type of pre or post convention offerings by the parent body attempting to update the education of librarians ... actual programs would vary with each annual meeting.

4A3 HH 4.S.3.

UPDATE '72 - a continuing education workshop on libraries & information science ...
sponsored by Special Libraries Association
District of Columbia Library Association
Law Librarians Society of Washington, DC
American Society for Information Science
Society of Library & Information Technicians
In Library of Congress Information Bulletin 1972
April 28 pp. 192-193

... features six concurrent panels on: Role of Library Technicians; Current Report on Continuing Education for Librarians; Pros & Constraints of Micro Media; etc. ... other programs may appear in other years ...

Charen, Thelma

MEDLARS INDEXING MANUAL
1971 PB-207-181
Bethesda, Md.; National Library of Medicine
511 p.

4A3 HH 5.K.3.

Costello, John C.

TRAINING MANUAL & WORKBOOK FOR USE IN ABSTRACTING & COORDINATE INDEXING TRAINING COURSE
1964
Battle Creek, Mich. Battelle Memorial Institute
117 p.

4A3 HH 5.H.1.

Gruenberger, Fred

COMPUTING
1971 April 2nd. course
New York; Canfield Press, Harper/Row
255 p.

... intended to serve as a follow-up course to those many introductions given in universities but not as complicated a text as would be needed by professionals in the computer fields ...

4A3 QA76.G88c

International Business Machines Corporation
Federal Systems Division

INTELLIGENCE DATA HANDLING SYSTEMS TRAINING
1971 March RADC-TR-71-53
New York; Rome Air Development Center
16 p.

... manual for on-the-job training

4A3 MS/M-4 0278

March, Jacqueline & Scheffler, Frederick

TRAINING OF TECHNICAL STUDENTS IN INDEXING ...
1971 ?
Dayton, Ohio; University of Dayton Research Institute
9 p.

4A3 HH 5.K.1.

Mueller, S. & others

MANUAL FOR THE ARRANGEMENT & DESCRIPTION OF ARCHIVES
1968
New York; HW Wilson Company
255 p.

4A3 Z695.2M95

Saxon, James A. & Platte, William S.

PROGRAMMING THE IBM 1401 ...
1962
Englewood Cliffs, NJ; Prentice-Hall, Inc.
208 p.

... serves as a self-instructional programming manual ...

4A3 QA76.8.I14.S27

Stokes, Roy

ESDAILE'S MANUAL OF BIBLIOGRAPHY
1967 rev. ed.
London; Geo. Allen & Unwin Ltd.
336 p.

10A3 Z1001.E75

There are many manuals of instruction in many special fields of endeavor, and much can be learned regarding theory, philosophy, and techniques by careful study of the appropriate ones. Recommended for home-study courses.

INTEGRATED ON-LINE NETWORKS AND DEFENSE RDT&E ON-LINE SYSTEM

Mr. Joseph M. Powers
System Requirements Functional Manager
Defense Documentation Center

At the 14th Military Librarians Workshop held in 1970 at the Industrial College of the Armed Forces, DDC reported on its initial, experimental efforts in developing an on-line network using remote CRT devices. At that time on-line systems were already considered not so much as the "wave of the future" but as a foregone conclusion. The experience of the intervening two years appears to have validated that judgment.

Much of the progress is attributable to the present state-of-the-art and its use and exploitation by DDC. Direct, on-line access to remote data banks via CRT or other terminal devices is an extension of the time-sharing concept that grew out of work sponsored by ARPA and developed at MIT as Project MAC. In this framework, individuals or organizations may have the use of a computer when they need it without having to underwrite the total computer cost. A community of users share the time or use of the computer as well as the cost of the system, and many more individuals or organizations can benefit from the services of a large-scale system without having to underwrite the full cost of operation and maintenance. Concurrent developments in mass storage, communications, terminal equipment, and software have made on-line systems not only technically feasible, but economically attractive and operationally practical.

The 14 terminals that are tied into the Defense RDT&E on-line system, operated by DDC for the Military Departments, last year accounted for over 42,000 searches. This was 7,000 more searches than were processed through the traditional mail-in-mail-out batch system that serves the entire DOD community. Cost benefits of the on-line system over the traditional semiautomated process appear to be 5:1 in favor of the on-line system: direct on-line unit costs of about $5 per search appear consistent in comparison with about $25 per search for batch processed requests. Neither of these figures, of course, includes indirect costs of file maintenance or related overhead.

Significant utilization of the system can be predicated upon:

- Immediate access to information
- Multi-data base availability
- Interactive user/system operation
- Classified/unclassified data availability
- Selective format outputs/display or print.

Although all of these are good reasons for using an on-line system, perhaps the most important is the interactive capability. This permits the user to enter his initial search, review the output, modify the search if needed, and continue to recycle the search until the desired information is obtained or the user is relatively certain it does not exist in the system.

At the present time, interactive access is provided to three data bases which form a spectrum of past, present, and future or projected RDT&E efforts:

1) Technical Report Data Bank - provides information on completed R&D work;

2) Work Unit Data Bank - indicates current R&D activity;

3) Research and Development Program Planning Data Bank - summarizes future effort.

Three broad refinements to the system are well into the planning stage.

▶ One scheduled for the near future is expansion of the data banks to provide for additional records on line, including access to domestic open literature records, translated journals, recent scientific book publications, and specialized data banks. This will increase the utility of the system, maximizing its use for those tied into the network.

▶ A second and significant future step will be to use the terminal not only for retrieval but also as an input device for keyboarding data at the source, getting it into machinable form, and then entering it directly over the network to the central computer's data banks. Incorporation of this function will permit more timely and accurate input of data, reduce redundant duplicate keyboarding, and eliminate recycling of data from source to DDC for edit corrections. It will also provide a basis for an integrated system and enhance the economics of system operation.

▶ A third major development that can be expected in the future is the linkage of the major Federal Agency systems into an integrated, cooperative network. Any user tied into one system will be able to access and retrieve information from any of the other interlinked systems. The objective is to provide the R&D community with mutual access to major national information resources, particularly those of AEC, NASA, and Defense. Much of this can be done by using the computer-to-computer technology developed by ARPA to link dissimilar systems together. Using this approach, a terminal user tied into the DOD on-line system who wishes to access NASA data would key in the search inquiry, using his own retrieval procedures but indicating the data banks to be searched at NASA. The DOD computer would pick up the inquiry, note the destination, and reformat the inquiry to enable the NASA computer to process it. The reverse procedure would apply for NASA terminals accessing the DOD system.

All of these capabilities will have a far-reaching impact on technology transfer -- the theme of this conference. It will make information more accessible and usable. It will eliminate many of the barriers and obstacles to obtaining information. It will bring the user -- the person who needs information -- into a direct, interactive relationship with the system that can provide the information. No longer will the user be forced to manually search through indexes and cross references to abstracts, or to mail requests for information to several government agencies and wait out delays only to find in many instances that his inquiry was not correctly interpreted or understood. Time-shared technology will provide a new generation of opportunities for those needing information and for those providing information.

In retrospect, DDC's experience with every new generation of information systems has shown a dramatic increase in information transfer. A little over 10 years ago, DDC (then ASTIA) had a staff of about 10 reference librarians who struggled to process 100 requests monthly using card catalogs for searching. Processing time was measured in months, and there was usually a backlog of 200-300 requests. Following installation of DDC's first computer, in the early 1960's, internal request processing time for bibliographies was cut to about 10 days even though workloads tripled in one year, going from 1,200 to 3,600 requests annually with no appreciable increase in staff. More information was being transferred because it was easier to get and took less time.

When the system was upgraded in the mid-sixties to a large-scale type, with random access memory units and the ability to print abstracts from machinable records, workloads again tripled. Requests eventually reached a peak of nearly 35,000 per year, an increase by a factor of 30. To have processed today's workloads by the traditional card catalog search methods would have required a staff of 200-300.

There was one serious drawback, however, to automated batch retrieval. About 20-25% of the searches required recycling or researching to retrieve the desired information, which meant delays to reprocess and reprint the entire request. The advent of a time-shared, on-line system corrected this deficiency by permitting the user to interact with the system. The user has immediate feedback on the results of his search and can personally determine its relevance. If not satisfied, the user may "renegotiate" the search to zero in on the exact information required, and he can choose to broaden the search to cover peripheral or related topics. In this sense the flexibility, immediate access, and cross reference capability of a card catalog system is built into the on-line system, and these capabilities are automated to reduce search time to a matter of seconds, permitting the user to spend his time reviewing the results of the search rather than in the actual retrieval or search process.

At DDC we are already finding dramatic increase in the usage of the system. The full operational system of 128 terminals is expected to process over a quarter of a million searches annually -- a very definite increase in technology transfer.

The system will also have a profound impact on the information center of the future, bringing with it a new role for librarians. Having a terminal for both input and retrieval is very much like having an automated catalog in the library; it is similar to moving DDC catalogs and computer systems into your own operation. This effect, plus the access to open literature data banks -- including MARC data on scientific books -- will eventually reduce the need for recataloging documents already catalogued by DDC. However, the terminal input capability will permit the originator of documents to prepare the input cataloging, the abstract and indexing data, and thus create the machinable record at the source. This places the responsibility for input data with the originator, and reduces or eliminates the necessity for others to reprocess, reindex, and recatalog those data. In this sense the on-line systems will bring about "shared cataloging."

As a result of these new capabilities and innovations, the librarian's role of the future will also change. Emphasis will be on becoming a true information specialist, knowledgeable in computers, communications, and micro/reprography, and knowing where to get information using on-line networks. The information specialist can become more of a member of the laboratory's management and planning team. With his access to past, present, and projected RDT&E -- both within DOD and in the public sector -- he can become an indispensable team member by identifying technical needs, capabilities, funding sources, sponsors, and opportunities for sharing technology. Access to the laboratory's work unit records representing ongoing R&D effort within his own laboratory, will enable him to project a picture of the active technical areas and identify other members of the team that are responsible for this effort. With this knowledge, he can anticipate information needs

and shape a vital, aggressive technical information program. The information specialist can participate with the management of the laboratory in providing them with reports of current R&D and summaries of related work done at other research centers.

The projected role changes made possible by on-line system networks should bring about new opportunities and challenges to the librarian of the future. These networks will also introduce new opportunities for technology transfer and utilization, in the cause of defense and peace here at home and around the world.

WORK MEASUREMENT AND STATISTICS

Lt Col Claude Johns
Director, Air Force Academy Library

As a basis for the discussions, the work measurement and statistics group defined "work standard" as a means of measuring the quantity of work produced by a person working at a normal pace under normal conditions.

It was agreed that the development of work standards or performance standards was essential in accomplishing other important library objectives. Listed below are some of the ways work standards could be helpful to library staffs, particularly managers:

- Eliminating wasteful, useless diversity.
- Providing administrators with reasonable norms.
- Assisting in planning activities.
- Controlling activities and scheduling work.
- Furnishing data on manpower requirements.
- Determining the number of employees that are required to perform a prescribed volume of work.
- Serving as a means of measuring and controlling costs.
- Assisting management in doing a better job of balancing workloads.
- Helping staff members to know what is expected of them.

There was consensus that standards are the key to scientific management and that, in fact, standards could be developed for any task that is quantitatively measurable. There was also agreement that 75 to 90% of all library work is quantifiable, routine work. However, as library service calls increasingly for exercise of judgment, professional knowledge and experience, and specialized training, quantitative measurement becomes more difficult and less precise.

Two examples of local efforts to develop work standards and statistics were described. The Air Force Academy Library is presently conducting a management survey with the overall purpose of identifying current library operations, analyzing them, and ultimately extending services, increasing efficiency, and reducing costs wherever feasible. A systems analysis of the Technical Services Division, which includes Acquisitions, Serials, Cataloging, Binding and Book Preparations Departments, is also being conducted. The work flow is being charted, positions and tasks described, and performances timed and measured. The methodology developed to provide these data will enable the Academy library management to compare its positions, performances, and costs with those of other academic libraries in the region, as well as to evaluate them in terms of unique objectives.

A similar study is also being made in the Public Services Division. In order to set goals for library service, which is the chief purpose of this Division, it was first necessary to determine the users' needs. A questionnaire was designed and submitted to the entire faculty (500) and a selected panel of 100 cadets from each of the four classes. The answers are now being tallied and analyzed, and recommendations will then be developed for continuing, adjusting, or offering new service concepts on the basis of the survey findings. A systems analysis also being made of the Library administration is charting work flow in both narrative and graphic form, identifying positions and tasks, and measuring performances. The results will be evaluated in terms of the objectives set for the Administrative unit.

The group agreed with the Discussion Leader, that whenever possible, self-examination and development of standards should be accomplished internally, within the library, possibly with the help of outside consultants. Specific methods or aids suggested included the following:

a. Use can be made of production statistics that already exist. For example, these can be compiled from employee production records. It was felt that all libraries have various statistical data which could be used in developing more precise standards.

b. Work sampling can be used effectively. For example, it is fairly simple to determine the time required to file a certain number of catalog cards into the public catalog.

c. Time-motion measurements have been widely used in industries. Management engineers have also used various time and motion techniques in their manpower studies of organizational units at Air Force bases.

d. Subjective standards can also be used. For example, mutually agreed to standards may be developed in personal interviews between management and workers. Perhaps less satisfactory are subjective standards such as the production of the fastest worker.

A performance standard should be obtainable for any worker producing at a normal pace, and should be one attainable under actual working conditions. Work standards should not be inflexible, since all standards necessarily contain some subjective judgments. The standards to be compared should be comparable -- identical in complexity, judgment requirements, quality requirements, and initial job qualifications.

In a discussion of position descriptions and evaluation forms, there was general agreement that a high rate of success had been attained in the writing of position descriptions, but that we had all generally failed in the development of evaluation forms and methods.

The group unanimously recommended that the Federal Library Committee assume the responsibility for assisting in the development of standardized evaluation forms and statistics.

UTILIZATION OF FINANCIAL AND HUMAN RESOURCES

Mr. Gerald M. Coble
Library Services Manager, Naval Training Support Command

Prior to the conference, the discussion leader sent each registrant a letter delineating an approach to the topic -- Utilization of Financial and Human Resources -- and outlining the procedures to be followed in the sessions. This letter is reproduced here as Appendix A. Each registrant was asked to bring to the workshop a statement describing a recent change in resources within their respective organizations in terms of the problems created, the possible or proposed solutions, and the anticipated effects. These statements are included as Appendix B. Three subgroups were established to discuss the problems from the standpoints of 1) priorities, policies, and ethics; 2) internal trade-offs; and 3) external trade-offs.

The problem statements reflect the negative climate currently prevailing for military library operations. Of the 17 libraries and information services represented by the session participants, 16 were declining in personnel, budget, or both. No definitive statements or plans for adjusting to library management on the downside were derived from the discussions;* however, the sessions did allow the participants to grapple with a substantial number of different, real world, library management problem situations and to consider professional approaches to their resolution.

The discussions and observations of the three workshop subgroups are briefly reported below by the respective chairmen.

Subgroup 1 - Priorities, Policies, and Ethics
Chairman: Virginia Eckel, Air Force Institute of Technology

The group discussions of the problem statements resulted in the following conclusions:

1. The librarians should take the initiative in decisionmaking and selection of materials to provide for continuing necessary requirements and extending service.

*A fine summary and guide is provided by Dean Tudor in his article "The Special Library Budget," SL, vol. 63: 517-527, Nov 1972.

2. Librarians should establish priorities with respect to mission requirements and library goals.

3. Changes or cuts in service should be diplomatically publicized and backed up by realistic statistics and research. Reasons for budget cuts should be similarly supported.

4. Extra or temporary assistance, from whatever sources, should be used only to handle backlogs or other special workloads. Sources of such assistance are:

- Volunteers
- Stay-in-School program
- CS Fellowship program
- Project Transition
- Youth Corps
- Assistance supported by nonappropriated funds.

5. The librarian, as a manager as well as librarian, has an ethical responsibility to follow and persist in convictions.

6. Librarians should learn how to interact with management to provide the required library service, and how to present their case and justify requests to management.

7. Additional sources of funds, reported as being used or suggested during the discussion, are:

- Nonappropriated funds
- Wives clubs
- Credit unions (gifts)
- Thrift Shops
- Association of US Army.

Subgroup 2 - Internal Trade-Offs
Chairman: Mary Mathis, Army Field Artillery School

The formulation of goals and priorities is essential as an indication of what an organization is trying to achieve and to become. This goal setting becomes even more important during periods of retrenchment. The methods of the financial manager can be applied to all areas of library management to focus on the essentials and thus provide for systematic deferment of action in less essential areas. The specific forms of internal trade-offs suggested during the discussion included the following:

1) Use funds budgeted for materials to purchase equipment that will enable more work per employee.

2) Reduce hours of operation.

3) Reduce services (cut services where it hurts).

4) Eliminate routing of periodicals.

5) Cross train to back up a single job or to create awareness of basic functions; focus main training on contact with public.

6) Simplify work; determine what can be eliminated without great loss.

7) Educate library patrons on the use of the library so they can help themselves more; suggested media are tours, films, orientations, brochures.

Subgroup 3 - External Trade-Offs
Chairman: Snowden Lafon, Naval Weapons Center

Since the solutions proposed in the problem statements were in all cases internal trade-offs, the group did not discuss the suggested solutions but generated the following possible external trade-offs to ease the situations:

1) Use of machine readable data bases such as tapes of Physics Abstracts (AIP) and Chemical Abstracts.

2) Use of on-line terminals -- DDC, NASA, etc.

3) Use of shared cataloging systems such as MARC tapes or other cooperative systems.

4) Use of local information exchanges -- Rocky Mountain Bibliographical Center, Black Gold Information Center, etc.

5) Stimulating the leadership in the various agencies to make a concerted effort to set up a good framework for maximizing the external trade-offs available to local libraries.

The group concluded that all the suggested trade-offs involve financial considerations -- tapes, hardware, software -- that make their use questionable in situations created by reduction of resources.

Appendix A

LETTER SENT TO SESSION REGISTRANTS PRIOR TO WORKSHOP

DEPARTMENT OF THE NAVY
CHIEF OF NAVAL TRAINING SUPPORT
PENSACOLA, FLORIDA 32508

IN REPLY REFER TO:
Code N38:lr
5070

Dear

At this writing, seventeen librarians have indicated an interest in the workshop on "Utilization of Financial and Human Resources", an excellent turnout.

Our problem as a group will be to avoid over-concentration on specific situations in order to be able to seek general principles which can guide all of us in management of our resources during a period in which, for most libraries, those resources are dwindling - sometimes slowly, too often with a dramatic suddenness which precludes decent planning, leaving the librarian floundering during a vital period. Ideally, we would all have contingency plans in the cupboard to cover all eventualities. Practically, we seldom do or they are partial. Our problems in such planning are complicated by many factors. Not the least of these, and a factor associated with the overall theme of the workshop Technology Transfer, are the network/system relationships of many libraries. In considering priorities, these relationships pose obvious dilemmas of a practical or ethical nature. As an example: the weaker grows one's own library situation, the more important the network becomes; but reliance on the network tends further to weaken the position of the library. Similarly, when all libraries, DOD, federal, industrial, academic, public, etc., are under stress, the total resources of any network decline at precisely the time the network becomes most essential. While I have stated these in non-arguable terms, they are certainly not propositions of absolute validity. What they can do is complicate the planning of the individual librarian. Guidelines are needed.

Trading-off between a library and a network/system is a class AAA trade-off. Most trade-offs available to a library are of a lower order, being strictly internal to the library (Class A) or occurring between the library and its parent organization (Class AA). The attached information copied from a Federal Library Committee draft presentation to National Commission

on Libraries and Information Science is useful as a generalized statistical picture of the average federal library and description of its standing as an organizational entity. There is reason to believe these data are representative of the average military library and no reason to suppose the situation has improved since these data were compiled. Indeed there is every reason to suppose the opposite. Yet few libraries have been disestablished except where the parent organization itself was disestablished. Adjustments in utilization of resources have, therefore, been mandatory in most DOD libraries or will be so in the future.

Adjustments (or trade-offs) may be bureaucratic or professional in nature - though the dividing line is frequently obscure. Bureaucratic adjustments tend to be defensive. The impetus behind them is protection of grade, heirarchial status, organizational perquisites, etc. Professional adjustments tend to be functional. They derive from considerations of library mission, procedures, standards, responsibilities, etc. The result may be the same; the ambience will be different. We need to be able to classify our reactions in terms of their impelling force.

All of the above, which probably seems a bit hazy, is by way of saying that we will be working on matters of fundamental significance. The planning for the workshop has proceeded to the following points:

A. You, as a participant, are asked to bring to the workshop a statement (30 copies, one page only) of a change in your utilization of human and/or financial resources made in the recent past or planned for the immediate future. The statement should give: (1) background, (2) problem, (3) possible solutions, (4) proposed solution with discussion, and (5) anticipated effects.

B. We will work in three groups. Suggested areas are:

1. Priorities, policies and ethics in a period of declining support.

2. Internal trade-offs - maximum utilization of resources in hand.

3. External trade-offs - maximizing utilization of agency or network/system resources.

If all goes as planned, the groups will analyze the statements in terms of their area of responsibility. Hopefully, they will derive from actual decisions, guidelines as to what is possible, the implications of competitive actions, areas to be explored further, and any other information which seems worth passing along to the military library community.

We are all in the soup together. My own office is down considerably in manpower with no reductions in responsibilities or workloads. These are not the best of times, and we would all be in a stronger position if we could agree on even a few positions and approaches. This workshop gives us an opportunity to try to do just that.

Sincerely,

EXTRACT FROM FEDERAL LIBRARY COMMITTEE'S DRAFT PRESENTATION TO NATIONAL COMMISSION ON LIBRARIES AND INFORMATION SCIENCE

The holdings of these individual Federal libraries average 16,500 items. Books predominate in most of collections (60 percent), but there are also less traditional materials, including recordings, maps, and films.

Exclusive of the national libraries, expenditures of Federal libraries in fiscal 1970 totaled $15,414,998 on materials, $37,361,777 on personnel, $2,261,139 on equipment, $4,923,959 on contracts, and $1,578,344 on miscellaneous items. Respondents to a 1970 survey of Federal libraries, undertaken under the auspices of the Federal Library Committee Task Force on Automation of Library Operations, indicated that the average individual library expenditure (exclusive of the three national libraries) for materials, staff, and equipment in FY 1970 was approximately $27,000. The typical Federal library has one librarian, who may or may not be a professional and who may or may not have supporting staff. The over-all ratio of professional to non-professional staff at the time of the 1970 survey was 1:1.3 -- far less than the American Library Association's recommendation of 1:3.5 ratio.

Despite their relatively small size, a number of Federal libraries use machine-readable data bases in servicing information needs of their clients. Only ten percent of the respondents to the 1970 questionnaire, however, were involved in cooperative networks. The networks in use were small, involving ten or fewer libraries, although some of them covered large geographic areas and helped to augment the small staffs and collections already noted. Machine-readable data bases utilized by some Federal librarians include MEDLARS, NASA-RECON, and Chemical Abstracts.

Federal Library Problems

Over the years Federal libraries, like other libraries, have had many common problems. Budgets and staff have seldom been adequate to assure the quantity and level of services their clients had a right to expect. Organizationally Federal libraries have usually been relatively low in the hierarchy, frequently sharing the status of the building management services, the supply office, the mail and files unit. Because library specialization and the importance of library holdings and services have not been fully recognized by some agency administrators, long-established specialized libraries with distinguished collections built up over many years, have been relegated to the basement level in reorganization of Federal agencies, even those whose mission accomplishments are obviously dependent upon collection and use of books and other printed materials. All Federal libraries have faced problems concerned with the housing of expanding collections, the inadequacy of library space assignments, equipment needs, disposition of surplus materials, procurement of current materials, control of the collections, service requirements, personnel administration, et. cetera.

Appendix B

MANAGEMENT PROBLEM STATEMENTS WITH OBSERVATIONS

MANAGEMENT PROBLEM 1

Problem

In a reorganization, the one purely clerical position in the book procurement section was lost, leaving librarians and library technicians to accomplish the job. There was no reduction in workload.

Possible Solutions

a. Revise the entire procurement system to reduce clerical effort. This would mean an increase in the cost of books, probably greater in total than the salary of the lost position.

b. Eliminate services and procedures. Although they are a major reason for the existence of the office and are closely interrelated, a close examination had indicated that some small savings is possible through elimination, consolidation, etc.

Proposed Solutions

Making up the loss is proceeding on an eclectic basis. Already mentioned are small changes in internal procedures. An old, slow flexowriter is being replaced with an IBM mag-tape driven typewriter. This faster, more capable, and easier to learn equipment is expected to be worth one-third to one-half an employee. The cost will probably come out of money that might otherwise have been budgeted for books. In addition, some procedures are now being performed elsewhere. For example, the printer is assembling the book orders, doing the work by machine where we had to do it manually. The clerical savings is about one-fifth.

Implications

The new procedures have made up at least 60% and possibly more like 80% of the loss, with no reduction in services or functions. The remaining work will have to be pushed upward to higher graded employees or further time-saving cuts will have to be devised. Basically the solution has consisted of trading off book funds for equipment, transferring some procedures to other offices, and asking remaining employees to do clerical work which they do very inefficiently with consequent losses in morale and overall salaries.

MANAGEMENT PROBLEM 2

Background

The library has eight full-time civilian spaces. The complement is based on the number of library items, and no other factor has any bearing on space allocation: eight spaces are recommended by manpower, and eight are approved. As in all libraries, the staff is not adequate for the needs. Some cross training has taken place in the past, but the inadequate staffing makes it difficult to do very much of it.

Problem

All of us know that with the armed services decreasing in size some civilian spaces will inevitably be cut. The problem will be to train the staff across department lines, so that when the cuts start the essential tasks can still be done.

Possible Solutions

Three possible measures are 1) cross train the present staff; 2) secure military slots; 3) obtain part-time student help.

Proposed Solution

It seems the only practical solution is to cross train the present staff, since it is most unlikely that either of the other two solutions would be given favorable consideration. The present plan is to cross train the five nonprofessional staff members, so that in the event of a personnel cut the remaining staff would be able to discharge additional duties.

Anticipated Effects

A reduction in the military service would also reduce the size of the classes at the school served by the library. This will lighten the library workload to the extent that a small staff reduction might have only a minimal impact on the performance of the library's mission.

Observations

Cross training is always good management in terms of coverage during vacations and sick leave, future promotions, etc., but the time to emphasize this device is when all factors are at optimum levels. Cross training is difficult to sustain when cuts put pressure on those remaining. The following questions must be considered in applying the cross training solution:

a. If cross training has been scant because of a poor staff/work ratio, how can it be increased to the intense level required by the short-fuse situation?

b. The emphasis in training should relate to the type of position to be cut; where will the first cuts be taken, assuming a choice?

c. What will be the effect on position descriptions, grades, etc., assuming that fewer people actually accomplish the present tasks?

d. Workload reduction, if any, is most likely to occur in reader services; can library hours be reduced?

MANAGEMENT PROBLEM 3

Background

The library subscribes to about 840 periodicals. They are technical in nature and are used by the installation's employees in fulfilling their duties. For many years it has been the policy of the library to route the periodicals to interested elements, some periodicals going to as many as a dozen offices. Routing slips are specially designed to suit the needs of each periodical routing.

Problem

A major reorganization accompanied by a reduction in personnel has imposed a double problem on the library. In the past, one person was available to devote full time to periodicals, and could obtain assistance if necessary. Now, the services of that one person must be divided among other duties, so that less than one man-year is available. In addition, the reorganization has created havoc in the routing slips: all office codes have changed and many people have been moved, creating additional work.

Possible Solution

The solution would be very simple if routing could be eliminated altogether and if this action could be logically justified. The nature of the work conducted at the installation and the need for the periodicals to be sent regularly to the users' offices prohibits this action. At least this is known to be true of a certain portion of the periodicals. It might be possible to select those periodicals which must be routed and to make the remainder available in the reading room. Another possible solution which is now under study is a better system of developing and maintaining routing slips with machine punched cards. A desk of cards would be punched for each routing and the routing slips could be printed from the cards as needed. The cards could be altered as changes in the routing became necessary.

Observations

Major reorganizations create temporary difficulties, but reductions in service may be long term if not permanent. For that reason the

second alternative, which maintains full routing while using ADP to make up some of the lost personnel time, seems the more logical. Of course, there is no certainty that the ADP section in this Class AA trade-off will accept the work, or that they will not eventually have to limit services to keep within their manpower restrictions.

MANAGEMENT PROBLEM 4

Background

The library is a division of the Technical Information Department, and is composed of three branches -- Acquisitions, Descriptive Cataloging, and Reference and Circulation. Its staff of 24 serves 4,500 patrons. The collection contains 65,000 books, 180,000 reports, and 300,000 microfiche. The library subscribes to 840 current periodical titles. Catalog production, information retrieval, and serials ordering have been automated. The library is moving to a different building that will provide more space and is considered desirable.

Problem

The Technical Information Department was recently required to relinquish 15 spaces. The library was obliged to give up four as its share, representing a 17% cut, with the cuts to be effective 30 June 1973. The problem is how to arrange the services and staff to accommodate the lower personnel complement.

Possible Solutions

Some possible solutions are:

1) Reduce the number of hours the library is open to users (from 9 to 6½).

2) Stop performing some nonbasic services such as ordering and recording retention copies of periodicals for other groups on the base.

3) Close a branch collection.

4) Thoroughly reorganize the library, with very few functions being considered "sacred," and shift functions as required.

5) Make no change and ask everyone to work harder.

6) Some combination of the above.

Proposed Solution

It is not possible to actually decide on a "best" solution until after the library is located in the new quarters and the staffing needs can be precisely determined. The best solution at the moment appears to be that of cutting out such services as ordering retention copies of periodicals for other groups. Choosing a solution of this type seems preferable to reducing hours of service or attempting to absorb the cuts with no change in operations. The chosen solution would reduce the quantity of services but maintain the quality of basic operations. By eliminating nonessential functions and shifting essential functions to staff members thus freed, the existing manpower could be used with maximum effectiveness.

Anticipated Effects

One desired effect of the proposed solution would be to indicate to management that cuts in staff must result in cutting out specific functions. The reduction in services would hit where it hurts and might result in pressure from users to restore the services, which would in turn lend support for positions. As stated previously, the quality of service would not be affected.

Observations

Here the library can plan its course of action. The department apportioned its cut horizontally to its divisions, of which the library is one. The library plans to cut vertically by completely eliminating services, in this case journal procurement and a branch library. Although in this case such action is possible, few libraries can employ vertical cutting as they have no extraneous or expendable service functions. If a squeaking wheel is wanted, reducing service hours and closing the branch should be effective. However, this is a bureaucratic rather than a professional approach. Left unanswered is the question of what the library loses in terms of control and knowledge of all periodicals being procured by the command. In any event, procurement of periodicals for other offices surely does not require four people, so a combination of solutions will be called for.

MANAGEMENT PROBLEM 5

Problem

The problem here, which could be considered a general situation for libraries, is the cost in manhours for manually performing all procedures necessary to procure books and periodicals, coupled with the need for more accurate and timely information on expenditures and better control of expenditures.

Solution

The solution is complete automation of procurement procedures. The required manhours for librarian, command librarian, the supply office, procurement office, and contractor/vendor are drastically cut. The system provides weekly funding statements and makes available such by-products as union lists, centralized multicopy purchases, and discounts returned to purchasers.

Observations

At issue is a complicated version of a common library money management problem -- funds available are divided up and allotted to discrete service units, faculties, collections, etc. Difficult or at least tedious accounting can result. The "chain" here is impressive, at least five links long, and is the most telling argument against centrally managed and funded library systems.

The situation is not entirely clear. The use of ADP seems very logical regardless of any other considerations. If better management information is required and the manpower to do it manually is not available while ADP equipment and personnel are, then there is little need to assess comparative costs. Certainly there would be no question if the by-products, always an iffy factor in automation, are given weight.

MANAGEMENT PROBLEM 6

Background

The library has a staff of two professionals and three subprofessionals. It contains 11,000 volumes, has a document collection of 190,000 items, and subscribes to 350 periodicals. Much of the collection is obsolete and scheduled for replacement.

Problem

A realistic budget request for replacement and new acquisitions was cut by 67%. This imposed severe restrictions on acquisitions, and required analyses of the library to develop a positive acquisition program.

Solution

A thorough analysis of the subject fields to be covered and their relative extent was initiated. Files of reference and bibliographic requests were checked to determine the major areas of use. Circulation statistics were charted and analyzed over a three-year period to identify the subject areas that represented the greatest amount of circulation. Basic reference sources were reevaluated, and the total

cost of the reference collection was plotted against a projected shelf-life of five years. Only those items considered absolutely essential were scheduled for replacement on a yearly basis; a rotating schedule of replacement for all other reference volumes was established over a five-year period. In addition, past expenditures for materials were broken down into cost per subject area to detect any past inequalities. The five major subject areas of the collection were reevaluated, using all standard reference and bibliographic tools obtainable. Book reviews appearing in all recent journals were checked against all projected acquisitions.

Effects

The areas of greatest use and of greatest deficiency were identified. Subject area priorities were determined, and funds for each area were allocated on a percentage basis according to assigned priorities. Total funding was first broken down into percentages: supplies, miscellaneous and contingency funds, 2%; subscriptions, 30%; GPO publications and technical reports, 12%; books, 56%. For the book expenditures, five major subject areas were identified. For example, accounting was considered as a subject area that required 9% of the 56% of the total available funds; of the money represented by the 9%, 60% is designated for continuing update and 30% for replacement volumes. Only those volumes which have had three or more favorable reviews or recommendations are designated priority items. If reviews are not available, titles are borrowed from other libraries or reviewed in bookstores prior to selection. Only essential office collection volumes are procured. Working in cooperation with the base supply officer, procedures have been established whereby all purchase requests for locally funded library-type materials are forwarded to the librarian for review and approval. All acquisitions are shipped through the library with the exception of those items prohibited by regulation, such as training materials and medical books. Duplication and needless expenditure of funds are thereby avoided.

Observations

The approach taken to the cut in money, as opposed to people, is thorough. Some facets of the procedure are questionable, such as borrowing books for examination purposes, thus passing along a debatable cost to other libraries, when the very ability to borrow the book should reduce the need to procure a copy for the library. No mention is made of cooperative arrangements although the kind of material receiving the in-depth examination seems to be books and journals rather than documents, reports, etc. It would appear that staff costs per book actually procured will be very high, a peculiar trade-off that frequently occurs when the cut is in procurement funds rather than personnel.

MANAGEMENT PROBLEM 7

Background

The installation is not a Federal library as such, but is in the information transfer business and has similar problems. The center was established in July 1962 by DOD directive to: 1) collect, store, and disseminate bibliographic information on studies and related material, within a particular area, of interest to DOD; 2) publish an annual bibliography with abstracts and three quarterly supplements to be widely distributed throughout DOD; 3) prepare special bibliographies about particular subjects on request; and 4) provide on-site reference and research of the collection. It did not provide for interlibrary loan services, or secondary distribution of documents cited in the published or special bibliographies.

Problem

The original personnel allotment was 13 spaces, professional and clerical, but four of these spaces were lost during several years. Over the past 10 years it was recognized that we were not doing what we should to fit the users' information requirements. Instead of continual refinement of the information to meet the specific needs of the user, operations had to be continually absorbed by less employees. Instead of being able to achieve the goal of synthesizing, summarizing, and evaluating the information provided to users, the information had to be of a more general nature so that the researcher must go through a great deal more information to find what he needed. In addition, the inability to provide copies of the documents cited means a delay for the researcher.

Solution

At various intervals recommendations were made to give the facility additional functions and the resources to perform such functions. Effective 13 July 1972, we have now been given a new charter incorporating most of the additional functions recommended, five additional spaces to perform these functions, and the money that we think we need to do the job.

Librarians are going to have to learn how to interact with management. They do not know how to get what they need from management because they do not know how to present their case and how to justify their requests. Denial of a request does not necessarily mean that management is unaware of the requirement: it could be that the need is not adequately proved. Nor does management's denial necessarily mean that a library should be relegated to its own stacks. Librarians will have to stop pretending that if they remain unobtrusive, both operationally and vocally (in writing), they can continue to function and give the same kinds of service they always have with or without ever decreasing resources.

If it means that the practicing librarian must go back to school to learn how to present the library requirements to management, then he or she will have to do this in order to survive. Librarians must learn how to prove the specific value of their operation to the organization or expect to be eliminated. Further, a requirement should be placed on all library schools to include in their curricula courses on management relations, budgeting, personnel, etc. so that the new librarians will be exposed to the kind of instruction that will help them cope with this management-relations problem.

Observation

This information facility is noted for its ability to retrieve lost ground and to establish new areas of service. From the synopsis, it is difficult to determine how the facility is going to be able to reach so far beyond its original functions when the staff will be increased by only one person (i.e., staff started at 13, shrank to nine, and is now to be increased to 14). Perhaps the original planning was inadequate and not all the spaces allowed were filled. The important trade-off here is a most desirable one -- the organization the facility serves has decided to shift costs for analyzing and synthesizing information from research and administrative personnel to information services personnel. In most libraries the flow is the other way.

MANAGEMENT PROBLEM 8

Background

In recent years, most libraries have made photocopy machines available for patrons' use. Many students and researchers find this service very convenient, especially if it replaces the taking of notes from noncirculating items like magazines. Photocopies of magazine articles are often sent on interlibrary loan for the use of patrons of libraries that do not subscribe to a particular magazine.

Problem

The Williams and Wilkins Company, publishers, has successfully brought suit before a Court of Claims Commissioner against the US Government (specifically the National Library of Medicine) for photocopying their publications. This company has recently issued a letter which says in part:

> "Beginning with 1973 volumes, we have institutional subscription rates which provide for an automatic license to make single-copy photocopies of articles from our journals for your patrons in the regular course of library operations on your premises, but does not include the making of photocopies for other institutions or for fulfilling inter-library loans ... Multiple copies of a single article may be made upon remittance of 5¢ per page per copy made to the publisher."

Two specific problems are raised by this letter: 1) the price increase will raise subscription prices to libraries by approximately 20%, and 2) it will no longer be possible to make photocopies for interlibrary loan. It also raises several questions. Do libraries in effect agree to the terms when they subscribe to Williams and Wilkins magazines, and what happens to a library that violates the terms? Will librarians be responsible for what their patrons do? Will other publishers follow this example? Some publishers do charge librarians more for subscriptions but do not place restrictions.

Possible and Proposed Solutions

No solution has been reached, of course, but several possibilities have been suggested.

1) The Williams and Wilkins Co. does offer one solution:

> "You will automatically be billed for the new subscription rate for 1973 volumes via your usual method of ordering (either through your agent or direct from us). In the unlikely event that no photocopies will be made of any articles in one or more of our journals to which you subscribe and you are in a position to assure us of this fact, you may apply for a refund for that portion of the institution rate which covers the license to photocopy."
>
> This solution carries its own answer in the phrase "in the unlikely event..."

2) Libraries could accept both the restrictions and the price.

3) They could pay the price and ignore the restrictions, doing any copying needed for internal and interlibrary use. A joint effort and pressure from all the libraries might prevent any retribution.

4) Subscriptions from this one company could be cancelled.

5) Libraries could say they do not copy and ask for the refund.

6) Some relief might eventually be provided by a higher court or new copyright law; this would not affect subscription prices but could remove restrictions.

7) Libraries could enter subscriptions in an individual's name at the lower rate.

Anticipated Effects

As the proposal stands, increased subscription costs will strain overburdened budgets, and interlibrary loan will not be able to serve researchers who do not have access to all journals.

Observations

This problem is the one informally identified as being caught between a rock and a hard place. The actions of publishers severely restrict cooperative, system type arrangements for the flow of information, yet so increase costs that the individual library cannot maintain the needed collection capabilities. The urge is strong to resort to unethical, dishonest procedures which are basically precarious and untenable. The ultimate loser -- the consumer of information -- can best resolve the impasse by refusing to publish in journals that are so stringently restricted in the information marketplace.

MANAGEMENT PROBLEM 9

Problem

This library is one of the many Federal libraries that must compete with activities of an ephemeral and spectacular nature. The fund and personnel allotments are low, and consequently there is no clerk typist or technician, the space is inadequate, and the book budget is insufficient.

Solutions

The following are some of the steps taken or proposed to relieve the problems:

1) Reduce the procedures involved in circulation.

2) Simplify cataloging methods.

3) Reduce hours for staff browsing of hospital collections, giving four extra hours per week to center.

4) Request microfilm or microfiche equipment, and store the micro copies of periodicals for self-service. This would save the quite considerable time now needed for retrieval of periodicals, and would help in the space problem since periodicals are now taking up an excessive amount of room.

5) Acquire free and inexpensive materials for a "home owners' corner." This is a heavily requested and depleted area.

Observations

The personnel situation is not clear, nor is the rationale for the steps taken or proposed. Reductions and simplifications in procedures are good management if nothing vital is lost. Three of the five steps would decrease personnel effort required, while two would seem to increase such efforts. Procurement of microfilm and microfiche copies of journals involves both added costs and added procedures, yet funds are so low that clerical effort is diverted to procurement of free materials in at least one important subject area. This situation is probably applicable to a great many libraries in that there are no real options, only a capability to move around deficiencies.

MANAGEMENT PROGRAM 10

Background

One central fund is allotted to the library for all subscriptions. Individual records of requirements are maintained for each organizational segment and are annually reproduced (titles/cost) and sent to each for updating. There is a wide range of interests and a tremendous variation in costs depending on programs and types of positions involved. Library operations are not mechanized and multiyear subscriptions are rare due to the changing nature of activity programs and the high cost in dollars and manhours in cancelling subscriptions.

Problem

For the last two years the annual mass renewals used all funds in the first quarter, and untold hours are spent justifying expenditures and the need for additional funds. Several conditions contribute to this problem. The requirements review is organizational code oriented with no indication of an awareness of the need for controlled buying; fewer dollars are being received despite rising rates; changed missions added more heavy users and new requirements; the bulk of the dollars go to a small percentage of the codes; little if any money is available for needs throughout the year.

Possible Solutions

1) Estimate and establish spending limits for major organizational codes to foster planning, selectivity, and more responsible utilization of funds.

2) Emphasize the responsibility of the individual as a society member to take advantage of reduced publication rates.

3) Encourage additional, regular donations of personal subscription titles; screen constantly for controlled circulation publications.

4) Continue to reduce the number of titles/copies received by dropping the infrequently used and "package" buys (containing more titles than needed), and titles readily available at local libraries.

Proposed Solutions

1) Using funds allotted to the library, establish official Cost Centers for major organizational codes with local apportionment of funds to assure more responsible screening of requirements.

2) Encourage personal subscriptions and donations to the library.

3) Alert qualified individuals to request controlled circulation publications to be passed on for library use.

4) Expand mailing list of own "List of Periodicals Received" and encourage reciprocity to achieve a fairly balanced interlibrary loan program.

5) Maintain a central library fund for basic and routed titles with a small reserve fund for emergency procurements.

Cost Centers have just been established by the comptroller's office. In the course of establishing these, it was learned that the unique nature of two of the major codes required that their allotments come from their own funds rather than the library's. The funds thus returned to the library for other uses amounted to 20% of the total subscription dollars.

Anticipated Effects

The library will continue in its role of coordinator with more equitable distribution of funds and more responsible screening of requirements at the working level. This will involve more record keeping for the library, but there will be less financial frustration. An increase in interlibrary loan program and in the reproduction of articles is another possibility. The impact of the unexpected 20% bonus has not yet been considered.

Observations

As stated, the problem is not within the anticipated pattern. No reductions in funds are involved other than the erosion caused by the steady rise in journal subscription rates. There are elements in the proposed solution which are questionable in policy terms, e.g., possible evasion of library subscription rates, reliance on non-library personnel to acquire needed materials, and emphasis on reproduction of articles. Overall the changes are good managerially and the 20% increase in actual funds available should eliminate the need for the questionable procedures.

MANAGEMENT PROBLEM 11

Background

The main library had one librarian and two library technicians. A branch library had one librarian, who worked 2 or 3 hours a week in a laboratory field library which is locked with a key available from a secretary. A school field library is run by part-time help furnished by the school. A large cut in funds in FY 67 has already been compensated for by 1) dropping approximately 20% of periodical subscriptions; 2) buying more reprints, either microfiche or paper copy and book pages as well as articles, from AIAA Technical Information Service; and 3) increasing interlibrary loans (110 more in FY 72 than in FY 71).

Problem

Effective 30 June 1972, one professional position was lost.

Solutions

The following changes have been made as a result of the permanent position loss:

a. Remaining employees are being cross-trained. While each library technician is responsible for certain tasks, each is familiar with the technical processes section, document section, and the branch library. The branch librarian works at the main library one day a week to assist with cataloging and to stay familiar with main library.

b. From time to time a temporary overhire is requested for a specific purpose. Currently a GS-3 library aid, on a six-month appointment, is relieving the library technicians in some of their duties so that additional time can be used for downgrading and declassifying technical reports to comply with Executive Order 11652.

c. The library participates in the Stay-in-School Program. One student works 16 hours a week during the school year and 40 hours a week during vacations.

Observations

Excellent use of temporary personnel is evident, and this approach is notable by its absence in other problem statements. Where relatively long-standing, stable arrangements are possible, as here, all factors are favorable. Reliance on other libraries and on a technical information service to overcome losses in collection development capability deserves study in terms of overall costs.

ORGANIZATION OF DOCUMENT COLLECTIONS

Mrs. Sara W. Dearman
Librarian, Redstone Scientific Information Center

The workshop on Organization of Document Collections was attended by librarians representing all branches of the Department of Defense in the Continental United States, and some from Canada and the Panama Canal Zone. The discussion was devoted primarily to standardization, or the lack of it, in military library document collections. To provide a basis for this discussion, as well as a record of the diverse practices used by military libraries in processing documents, each participant was requested to answer a questionnaire on procedures used in his library.

The questionnaire, as well as the discussion, was divided into five major areas: Cataloging Procedures; Storage Procedures; Physical Arrangement of the Collection; Handling of Classified Material; and, Destruction Procedures. The questionnaire was designed to accommodate answers from libraries which used automated procedures, and those using manual procedures. Although several libraries were considering conversion to automation, only one agency reported actual usage of an automated system, and it was decided to restrict the discussions chiefly to manual systems of document organization and control.

The statistics compiled by this fairly typical cross section of military librarians indicate an alarming lack of standardization in document handling. As may be noted in the analysis of answers to the queries (results included at end of discussion report), a given procedure was used by a majority only in the case where just two options were provided -- "Does your library provide abstracting services?" and "Is your storage manual or automated?"

The group agreed that it was difficult to understand why procedures have not become standardized for document collections when standard procedures for processing open literature collections have been employed for decades. Some reasons advanced for this were: 1) failure on the part of higher authority within the individual agencies to understand its importance; 2) variations in local security regulations for handling classified material; 3) a deficiency in specialized training for librarians who process documents; and 4) diversity of document collections which are often oriented to highly specific missions.

It was emphasized by several attendees that standards especially designed for document processing, and sponsored by Federal and Department of Defense agencies, are available. Specifically, The Standard for Descriptive Cataloging of Government Scientific and Technical Reports by the Committee on Scientific and Technical Information (AD 641092) and the Thesaurus of Engineering and Scientific Terms (AD 672000), a joint DOD effort, were recommended to standardize descriptive and subject cataloging. Other tools suggested for guidance in standardizing procedures were the DDC and NASA corporate sources and author authority compilations.

The chief obstacle to achieving standardization in the organization of document collections in military libraries appears to be one of group self-discipline. Standard procedures have been established by various government agencies, but unfortunately they differ in some respects. It remains for some organizations such as the Military Librarians to agree on one of these and prevail on the majority to implement the agreement in the individual agencies.

The technology is now available for a vast automated information network that would link all Department of Defense libraries with each other and with the large national depositories such as DDC, NTIS, and NASA. Within the next decade we should see this network established. Military librarians will have a key role in this network and should be prepared to participate in and benefit by it. Crucial to the success of such an undertaking is a commonality of language and procedures. It is imperative for proper communication in an automated system that the Babel now prevailing in military libraries be replaced with a consistent standard system which is flexible enough to serve a document collection of any size, devoted to any mission. It is recommended that future Military Librarians Workshops devote a considerable amount of time and energy to this effort.

QUESTIONNAIRE RESULTS

HOW MILITARY LIBRARIES ORGANIZE DOCUMENT COLLECTIONS*

CATALOGING

1. What standard for descriptive cataloging is used in your library?

COSATI	2
COSATI + In-House	7
COSATI + In-House + LC	2
In-House Developed	5
Dewey	3
Library of Congress	2
Don't Know	1

2. What authority listings are employed in your library?

   a. For Corporate Author

DDC	4
DDC & NASA	2
Library of Congress	3
NASA	1
AEC & DDC & NASA	1
In-House Listing	1
DDC & In-House & NASA	1

   b. Personal Author

No File Kept	2
Library of Congress	3
DDC & NASA	1

*Not all present filled in questionnaires; not all who filled in questionnaires answered all queries.

LC & GPO ---------- 1

NASA ---------- 1

AEC ---------- 1

In-House Developed ---------- 1

None ---------- 1

AEC & DDC & NASA ---------- 1

c. Subject Headings

Library of Congress ---------- 2

In-House Developed ---------- 2

COSATI Listing ---------- 1

DDC & NASA ---------- 2

DDC & NASA & Medical Thesaurus ---------- 1

Test ---------- 1

Test & DDC Thesaurus ---------- 2

DDC Thesaurus ---------- 1

3. How much of your document collection is fully cataloged - both descriptive and subject cataloging?

All Hard Copy and All Microfilm ---------- 4

All Hard Copy and No Microfilm ---------- 7

Part of Hard Copy and Part of Microfilm ---------- 6

Part of Hard Copy and No Microfilm ---------- 6

All Hard Copy and Most Microfilm ---------- 1

Other Documents Originated in Agency
Whether Hard Copy or Microfilm ---------- 1

4. Does your library rely on any other sources such as DDC and NTIS to supplement your cataloging efforts?

DDC & NASA & NTIS ---------- 6

DDC & NASA ---------- 2

Not at All ---------- 7

DDC & NTIS ---------- 3

DDC & NASA & NTIS & SUDOCS ---------- 1

RSIC ---------- 1

5. Does your cataloging department provide abstracting as well as cataloging services?

Yes ---------- 2

No ---------- 21

STORAGE

1. Is storage manual or automated?

Manual ---------- 23

Automated ---------- 1

a. If manual, what cards are filed?*

Title ---------- 19

Subject ---------- 21

Author ---------- 18

Corporate Author ---------- 15

Contract Number ---------- 8

Report Number ---------- 4

Series ---------- 1

AD Number ---------- 2

NASA Number ---------- 1

Shelf List ---------- 1

*(Note: Of 23 agencies using a manual system, four file no title cards, two file no subject cards, one files only subject cards, four file no personal author cards, and eight file no corporate author cards.)

b. If automated, what are your retrieval points?

One agency reported an automated system. Retrieval points were subject, personal author, corporate author, contract number, report number, funding agency, classification, limitation, and accession numbers (own, DDC, NASA).

2. If you employ an automated system, do you store on tape or disc, and do you have an on-line capability?

a. Tape ---------- 0

b. Disc ---------- 1

c. On-Line ---------- 0

3. If you use an automated system, what procedures other than cataloging and retrieval are automated?

None ---------- (only 1 agency reporting)

PHYSICAL ARRANGEMENT OF COLLECTION

1. How is your hard copy filed?
(Note: 2 agencies are converting to Library of Congress system.)

Report No. ---------- 10

Accession No. ---------- 7

Dewey Classification ---------- 3

Contract Number ---------- 1

LC/Accession/Report No. ---------- 1

Old by Report No., New by Acc. No. ---------- 1

Especially Assigned Call No. ---------- 1

Subject/Author ---------- 1

Some by AD No., Some by Corporate Author,
Some by LC No., Some by GPO No. ---------- 1

2. How is your microfilm and microfiche filed?

Accession Number ---------- 17

No. Assigned In-House ---------- 1

By Report No. ---------- 2

Numerically As Received ---------- 1

3. Are classified documents separated physically from unclassified documents?*

Yes ---------- 15

No ---------- 4

Not Holding Classified Documents ---------- 5

*(Note: A great deal of dissatisfaction was expressed by those who were forced to separate classified and unclassified material. In several instances it required personnel to go to different floors to assemble a single series, parts of which were classified, and parts unclassified.)

HANDLING CLASSIFIED MATERIAL

1. Are there any differences in the way that classified and unclassified documents are cataloged in your library?

Yes ---------- 3

No ---------- 12

No Answer ---------- 9

No Classified Material Cataloged ---------- 2

CNWDI Material Marked with Red Label ---------- 1

2. What procedures are used to ascertain clearance and need-to-know before circulating a classified document?

All Patrons Cleared for All Material ---------- 5

In-House Form ---------- 1

Library Patron Card Stating Clearance and Need-to-Know ---------- 4

Call to Security ---------- 3

Documents Not Circulated ---------- 2

Telephone Book Lists Clearance ---------- 1

Personal Acquaintance ---------- 1

3. Do you allow all personnel working in the documents area to handle classified material, or are only selected personnel assigned to this task?

All ---------- 7

Selected Personnel ---------- 10

DESTRUCTION PROCEDURES

1. Are documents destroyed at regular intervals, or just when the storage area becomes crowded, or other?

When Storage Area is Crowded ---------- 6

Regular Intervals ---------- 7

Both ---------- 3

Only When Superseded ---------- 1

Irregular Intervals ---------- 1

2. What criteria are considered as a basis for destruction?

No Further Need ---------- 3

No Circulation ---------- 2

Superseded or No Circulation ---------- 2

Obsolescence or Extra Copies ---------- 2

Age (Over 2 Years) ---------- 2

Age + No Circulation ---------- 2

In-House Review of Value ---------- 1

Interim Reports Destroyed When Final is Available --------- 1

3. What is the professional level of the person who makes the decision on what shall be destroyed?

Librarian (No Rank Given) ---------- 5

Librarian, GS-12 ---------- 1

Librarian, GS-13 ---------- 1

Librarian, GS-9 ---------- 1

Panel of All Document Librarians ---------- 2

Chief Librarian ---------- 2

Senior Advisor to Library ---------- 1

Provost Marshal ---------- 1

Security Officer (Non-Librarian) ---------- 1

Historical Researcher (Next to Highest Grade) ---------- 1

GS-6/With Advice from Chief Librarian ---------- 1

Director of Library for Classified;
GS-6, Unclassified ---------- 1

Library Technician, GS-4 ---------- 1

Miss Virginia E. Eckel, Chairman

On Wednesday morning separate meetings of Army, Navy, and Air Force librarians were held, followed by a business session. Mr. Frank Kurt Cylke, Executive Secretary of the Federal Library Committee, discussed the forthcoming General Accounting Office report on Federal Library activities and described the Federal Librarians' Round Table and the Federal Library Service Center efforts. The Federal Librarians' Association is a recently incorporated, non-profit group designed to serve the personal and professional interests of Federal librarians. Incorporators were Cathryn C. Lyon, Naval Weapons Laboratory, Dahlgren, Virginia; John Sherrod, Director of National Agricultural Library; and Mr. Cylke.

The report of the Military Librarians' Long Range Planning Committee was presented by Mrs. Margrett B. Zenich, Chairman. The other members are Lt. Col. Claude J. Johns, Director, Air Force Academy Library; Frances L. Carey, Naval War College Library; and Ernest Dewald, Director of Defense Mapping Agency, who is the first DOD representative named to the Committee. Invited to attend the meetings as consultants were John Cook and Robert Severance, former Committee chairmen; Ruth Longhenry, Army War College, the incoming Chairman of the Military Librarians' Division, Special Libraries Association; Virginia Eckel, current Chairman of the MLD, SLA; Egon Weiss, Military Academy, West Point; and Robert L. Martin, Natick Laboratories (retired).

The major announcements concerned plans for future meetings. The 17th Military Librarians' Workshop will be held at the Naval Research Laboratory, Washington, DC, in the fall of 1973, at the invitation of Doris Baster, Director of the NRL Library. The group has been invited to hold the 1974 meeting in Fort Huachuca, with Edith Frazier, Technical Librarian, as the host. Fort Huachuca is in the mountains of Galiuro in Arizona, about 70 miles from Tucson, and most of the meetings will be held in Tucson. Lt. Col. Claude Johns, Director of the USAF Academy Library, has tentatively invited the Military Librarians to Colorado Springs in 1975.

PARTICIPANTS

Ms. Lucille Achauer, Naval Ship Systems Command Technical Library, National Center Number 3, Washington, D.C. (Group 6)

Mr. Alfred M. Anzalone, Plastics Technical Evaluation Center (PLASTEC) Picatinny Arsenal, Dover, New Jersey 07801 (Group 1)

Ms. Billye J. Archunde, Air Force Weapons Laboratory, Technical Library, Kirtland Air Force Base, New Mexico 87117 (Group 1)

Ms. Jacqueline W. Baldwin, USAIMA Library, Fort Bragg, North Carolina (Group 1)

Ms. Pauline Baldwin, Administration Department, Depot Library Division Naval Ammunition Depot, Crane, Indiana 47522 (Group 2)

Ms. Nancy L. Ballard, Industrial College of the Armed Forces Library, Fort Lesley J. McNair, Washington, D.C. 20315 (Group 3)

Ms. Mary M. Barney, Industrial College of the Armed Forces Library, Fort McNair, Washington, D.C. 20315 (Group 1)

Ms. Doris P. Baster, Naval Research Laboratory, Washington, D.C. 20390 (Group 5)

Mr. Eugene G. Beary, Chief, Technical Library, US Army Natick Laboratories Natick, Massachusetts 01760 (Group 2)

Ms. Jane F. Bentley, Redstone Scientific Information Center, Redstone Arsenal, Alabama 35809

Ms. Bernice Black, Redstone Scientific Information Center, Redstone Arsenal, Alabama 35809 (Group 5)

Ms. Virginia I. Bruch, Army Library Division, TAGO, Pentagon, Washington, D.C. 20310 (Group 2)

Ms. Mary A. Buckner, Army Library Division, TAGO, Pentagon, Washington, D.C. 20310 (Group 2)

Mr. Leon Burg, US Army Tank-Automotive Command (AMSTA-RPL), Warren, Michigan 48090 (Group 8)

Ms. Dorothy E. Calhoun, Librarian, Maxwell Community Library, Building 28 Maxwell Air Force Base, Alabama (Group 2)

Ms. Frances L. Carey, Naval War College, Newport, Rhode Island (Group 3)

Mr. Irving G. Carlson, Library, Naval Electronics Laboratory Center, 271 Catalina Boulevard, San Diego, California 92152 (Group 8)

Ms. Mary D. Carmichael, Naval Training Equipment Center, Orlando, Florida 32813 (Group 7)

Mr. John P. Carrier, Harry Diamond Laboratories, Connecticut Avenue and VanNess Streets, N.W., Washington, D.C. (Group 3)

Ms. Cleo S. Cason, Redstone Scientific Information Center, Redstone Arsenal, Alabama 35809

Ms. Eva M. Cathey, Librarian, US Army SAFEGUARD System Command, P.O. Box 1500, Huntsville, Alabama 35807 (Group 8)

Ms. Barbara L. Chalfant, Air University Library, Maxwell Air Force Base, Alabama (Group 2)

Mr. Philip Chaplin, Directorate of History, Canadian Forces Headquarters, Ottawa, Ontario, Canada (Group 8)

Mr. G. L. Christie, Defence Research Board, CFHQ, 125 Elgin Street, Ottawa, Canada (Group 1)

Ms. Helen L. Church, United States Air Force Academy Library (DFSLB), United States Air Force Academy, Colorado 80840 (Group 5)

Mr. James P. Clark, Redstone Scientific Information Center, Redstone Arsenal, Alabama 35809 (Group 1)

Ms. Crystal W. Clemens, US Army Air Defense School Library, Fort Bliss, Texas (Group 7)

Mr. Gerald M. Coble, Naval Training Support Command, Building 45, NAVAIRSTA, Pensacola, Florida 32508 (Group 7)

Ms. Margot B. Collins, USAFSAM Aeromedical Library, Brooks Air Force Base, Texas 78235 (Group 8)

Ms. Janice L. Colmer, US Army Ordnance Center and School (ATSOR-SAL), Aberdeen Proving Ground, Maryland 21005 (Group 1)

Mr. John L. Cook, HQ USAF, AFMPC/DPMSBS-1, Randolph Air Force Base, Texas 78148 (Group 7)

Ms. Doris W. Cornett, Redstone Scientific Information Center, Redstone Arsenal, Alabama 35809 (Group 1)

Mr. Michael A. Costello, Picatinny Arsenal, Dover, New Jersey 07801 (Group 2)

Ms. Edith R. Cribbs, Redstone Scientific Information Center, Redstone Arsenal, Alabama 35809 (Group 1)

Ms. Dorothy A. Cross, USAREUR Special Services Library Program, RRI-56th St., Bangor, Michigan 49013 (Group 3)

Ms. Eula B. Curtsinger, Librarian, Fifth USA Language Training Facility Library, 529th MI Company, Fort Hood, Texas 76544 (Group 2)

Mr. Frank Kurt Cylke, Federal Library Committee, Library of Congress, Washington, D.C. 20540 (Group 7)

Dr. Michael Dankewych, Naval Ship Research and Development Center, Bethesda, Maryland 20034 (Group 5)

Ms. Bessie M. Daughtry, Command Librarian, Air Training Command, Randolph Air Force Base, Texas 78148 (Group 1)

Ms. Sara W. Dearman, Redstone Scientific Information Center, Redstone Arsenal, Alabama 35809 (Group 8)

Mr. Ernest Dewald, Defense Mapping Agency, Building 56, US Naval Observatory, Washington, D.C. 20305 (Group 6)

Mr. Harold G. Dickerson, Education Branch, Public Affairs Office, Marshall Space Flight Center, Alabama 35812 (Group 1)

Ms. Frances Dickey, Redstone Scientific Information Center, Redstone Arsenal, Alabama 35809 (Group 1)

Ms. Jean E. Dickinson, Air Force Flight Test Center, Technical Library, 6510 ABG/SSD, Edwards Air Force Base, California 93523 (Group 7)

Ms. Eleanor A. Driscoll, Director of Command Libraries, Air Force Systems Command, AFSC/DPSL, Andrews Air Force Base, Washington, D.C. 20331 (Group 3)

Ms. Anna B. Dumas, Library Technician, US Army SAFEGUARD System Command, P.O. Box 1500, Huntsville, Alabama 35807 (Group 8)

Ms. Virginia Eckel, Air Force Institute of Technology, Wright-Patterson Air Force Base, Ohio 45433 (Group 7)

Ms. Theresa Egan, Head, Technical Publications Library, Naval Air Station, Point Mugu, California 93042 (Group 8)

Ms. Aileen V. Ellis, Base Library, Eglin Air Force Base, Florida 32542 (Group 3)

Ms. Paulette Ellison, Computer System Analysis, OSO, OORI, USACGSC, Ft. Leavenworth, Kansas 66047 (Group 1)

Ms. Patricia A. Ensey, Army Tropic Test Center Technical Library, Ft. Clayton, Canal Zone (Group 8)

Mr. Clayton A. Erkert, Librarian, Naval Air Development Center (ADT), Warminster, Pennsylvania 18974 (Group 5)

Ms. Ethel R. Ethridge, Redstone Scientific Information Center, Redstone Arsenal, Alabama 35809 (Group 1)

Ms. Dorothy W. Evans, Library, Walter Reed Army Institute of Research, Walter Reed Army Medical Center, Washington, D.C. 20012 (Group 1)

Ms. June H. Ewell, United States Army Aviation School Library, Fort Rucker, Alabama 36360 (Group 2)

Mr. Jay D. Farris, The Institute of Heraldry, US Army, Cameron Station, 5010 Duke Street, Alexandria, Virginia 22314 (Group 3)

Ms. Elisabeth J. Fleenor, US Air Force Academy Library, US Air Force Academy, Colorado 80133 (Group 3)

Ms. Betty H. Fogler, Academy Library, US Air Force Academy, Colorado 80840 (Group 8)

Ms. Rosalie O. Forst, Chief, Technical Library Division (STEAP-TL), Aberdeen Proving Ground, Maryland 21005 (Group 5)

Ms. Edith J. Fraser, Technical Reference Division, Headquarters Fort Huachuca, Fort Huachuca, Arizona 85613 (Group 1)

Mr. Raymond Frith, Chief, Service Division, Directorate Technical Service, Defense Documentation Center, Cameron Station, Alexandria, Virginia 22314 (Group 5)

Ms. Virginia Galbraith, Special Services, Post Library System, Fort Huachuca, Arizona 85613 (Group 1)

Ms. Margaret L. Gallagher, Librarian, Naval Avionics Facility, Indianapolis, Indiana 46218 (Group 3)

Ms. Caroline S. Ghebelian, Naval Explosive Ordnance Disposal Facility, Indian Head, Maryland 20640 (Group 1)

Ms. Patricia H. Gipe, Defense Systems Management School Library, Ft. Belvoir, Virginia 22060 (Group 7)

Ms. Margaret Goodrich, Special Services Libraries, Chief Librarian, Fort Polk, Louisiana 71459 (Group 7)

Ms. Roberta C. Gray, USASATC&S Technical Information Center, Ft. Devens, Massachusetts 01433 (Group 3)

Mr. Tom R. Greene, US Army Infantry School Library, Fort Benning, Georgia 31905 (Group 2)

Mr. Walter B. Greenwood, Director, Navy Department Library, Building 220, Room 220, Washington Navy Yard, Washington, D.C. 20390 (Group 5)

Ms. Donna K. Griffitts, Medical Librarian, Office of the Surgeon General/Joint Medical Library, Forrestal Building, Room 6E040, Washington, D.C. 20314 (Group 1)

Ms. Marina Griner, Academic Library, Fort Benjamin Harrison, Indiana 46216 (Group 5)

Ms. Ruth M. Haggerty, Ash Library, Armed Forces Institute of Pathology, Washington, D.C. 20305 (Group 1)

Mr. Eugene W. Hall, DMA Topographic Center, Department of Technical Services, Information Resources Division, 6500 Brooks Lane, Washington, D.C. 20315 (Group 7)

Ms. Wilma R. Harris, USAPHS Technical Library, Fort Wolters, Texas 76067 (Group 2)

Mr. Gerald L. Harrison, Headquarters AFLC/XODJ, Wright-Patterson Air Force Base, Ohio 45433 (Group 1)

Ms. Virginia B. Harvey, USAF, Armament Development and Test Center, Technical Library, ADTC(DLOSL), Eglin Air Force Base, Florida 32542 (Group 8)

Ms. Judy Hawthorne, Redstone Scientific Information Center, Redstone Arsenal, Alabama 35809 (Group 2)

Ms. Ava Dell Headley, USACDEC, Technical Library, Box 22, Fort Ord, California (Group 3)

Ms. Ida M. Hendry, 6940th Air Base Group (Base Library), Goodfellow Air Force Base, Texas 76901 (Group 3)

Ms. Mathilde C. Higgins, Librarian, Naval Air Development Center (ADT), Warmister, Pennsylvania 18974 (Group 8)

Ms. Ruth E. Hodge, US Army War College Library, Cataloging Section, Carlisle Barracks, Pennsylvania 17013 (Group 8)

Ms. Martha M. Howard, Fisher Library, US Army Chemical Center and School, Fort McClellan, Alabama (Group 3)

Ms. Doris A. Hunter, US Army Military History Research Collection, Carlisle Barracks, Pennsylvania 17013 (Group 2)

Ms. Barbara M. Ivey, Academy Library (DFSLBA), US Air Force Academy, Colorado 80840 (Group 2)

Ms. Nina Jacobs, Ramey Air Force Base Library, Box 216, Ramey Air Force Base, Puerto Rico 00604 (Group 2)

Ms. Evelyn R. Jarman, Robins Air Force Base, Library, Robins Air Force Base, Georgia 31093 (Group 1)

Ms. Elizabeth F. Jesse, Librarian, Armed Forced Staff College, Norfolk, Virginia 23511 (Group 2)

Lt Col Claude Johns, Director, USAF Academy Library, DFSLB, US Air Force Academy, Colorado 80840 (Group 6)

Ms. Elizabeth A. Johns, Headquarters MASSTER, ATMAS-PA-PUB-L, Fort Hood, Texas 76544 (Group 2)

Mr. Duane A. Johnson, Base Library FL 3018, Chanute Air Force Base, Illinois 61868 (Group 5)

Mr. Stanley Kalkus, Naval Underwater Systems Center, Newport, Rhode Island (Group 1)

Ms. Joan P. King, United States Army Aviation School Library, PO Drawer O, Buildings 5907 - 5906, Fort Rucker, Alabama 36360 (Group 6)

Ms. Florence Klemm, US Air Force Academy, US Air Force Academy, Colorado 80840 (Group 7)

Mr. Charles R. Knapp, US Army Engineer School, Building 270, Thayer Hall, Fort Belvoir, Virginia 22060 (Group 3)

Dr. Julian S. Kobler, Director, Redstone Scientific Information Center, Redstone Arsenal, Alabama 35809

Ms. Natalie E. Kothe, US Army Engineer Topographic Laboratories, Fort Belvoir, Virginia 22060 (Group 2)

Mr. Snowden E. LaFon, Technical Librarian, US Naval Weapons Center, China Lake, California 93555 (Group 7)

Ms. Mary E. Lassanyi, US Army Frankford Arsenal, Technical Directorate, Technical Library, Bridge and Tacony Streets, Philadelphia, Pennsylvania 19137 (Group 5)

Mr. Benedict Laupacis, Departmental Librarian, Department of National Defence, Room 1042, "C" Building, Ottawa, Ontario, Canada (Group 1)

Ms. Jewell M. Lemley, USAMMCS, Office of the Secretary, Library Division, Redstone Arsenal, Alabama 35809 (Group 2)

Mr. Willie L. G. Levett, US Army Aviation Systems Command, DMIS, Reference Library Section, P.O. Box 209, Main Office/12th and Spruce Street, St. Louis, Missouri 63112 (Group 8)

Ms. Marie J. Lindsey, Ft. Lewis Library System, Grandstaff Memorial Library, Building 2109, Ft. Lewis, Washington 98433 (Group 7)

Ms. Hazel E. Livermore, US Army Weapons Command (SWERR-PL), Rock Island, Illinois 61201 (Group 5)

Ms. Ruth A. Longhenry, US Army War College Library, Carlisle Barracks, Pennsylvania 17013 (Group 5)

Ms. Cathryn C. Lyon, Naval Weapons Laboratory, Dahlgren, Virginia 22448 (Group 1)

Ms. Lillian E. Maddox, Document Services Officer, Office of the Assistant for Study Support (OAS), Kirtland Air Force Base, New Mexico 87117 (Group 1)

Ms. Josephine G. Magee, US Army Signal Center and School, Fort Monmouth, New Jersey 07703 (Group 2)

Mr. George L. Mahoney, Naval Amphibious School, Little Creek, NAVPHIBASE, Norfolk, Virginia 23521 (Group 8)

Mr. Daniel G. Maiello, Military Entomology Information Service, AFPCB, Forest Glen Section, WRAMC, Washington, D.C. 20012 (Group 3)

Ms. Patricia Malley, US Army Computer Systems Support and Evaluation Command, NASSIF Building, Washington, D.C. 20315 (Group 5)

Ms. Anne S. Marshall, US Naval Coastal Systems Laboratory, Panama City, Florida 32401 (Group 3)

Ms. Margaret N. Martin, US Naval Academy Library, Annapolis, Maryland 21402 (Group 8)

Mr. Robert L. Martin, US Army Natick Laboratories (Retired), 21 Northridge Road, Columbus, Ohio 43214 (Group 1)

Ms. Mary L. Mathis, Morris Swett Technical Library, US Army Field Artillery School, Fort Sill, Oklahoma (Group 7)

Ms. Nel Mathys, Rome Air Development Center, Griffiss Air Force Base, New York 13440 (Group 8)

Ms. Rosemary Maxwell, 31 Combat Support Group (SSL), Homestead Air Force Base, Florida 33030 (Group 1)

Ms. Christian Joyce Mayo, US Army Military Police School Library, Ft. Gordon, Georgia 30905 (Group 8)

Ms. Imogene M. McCauley, Missile Intelligence Agency, Redstone Arsenal, Alabama 35809 (Group 5)

Mr. John B. McClurkin, Marine Corps Education Center, Breckinridge Library, Quantico, Virginia (Group 3)

Mr. Anthony F. McGraw, Chief, Library Division, USA Command & General Staff College Library, Ft. Leavenworth, Kansas (Group 2)

Ms. Odell McGregor, Librarian, Academic Library, School of Health Care Science, Sheppard Air Force Base, Texas 76311 (Group 6)

Mr. Real Menard, Librarian, Defence Research Board, Defence Research Establishment, Valcartier, P.O. Box 880, Courcelette, P.Q., Canada (Group 1)

Ms. Ruth S. Meredith, US Army Weapons Command (SWERR-P-L), Technical Library, Rock Island, Illinois 61201 (Group 2)

Mr. Robert L. Messinger, Defense Mapping Agency/Aerospace Center, Second and Arsenal Streets, St. Louis, Missouri 63118 (Group 1)

LT Rebecca Michaels, Post Library Officer, Fort Monroe, Virginia 23351

Ms. Bonnie R. Miller, Librarian, USAMICOM (AMSMI-YDL), Redstone Arsenal, Alabama 35809 (Group 5)

Ms. Virginia S. Miller, Supervisory Librarian, US Army Transportation School, Fort Eustis, Virginia 23604 (Group 1)

Mr. Henry W. Millington, National Security Agency (P221), Ft. George G. Meade, Maryland 20755 (Group 5)

Mr. William W. Mills, Jr., Defense Communications Agency, Code T202, Technical Library System Engineering Facility, 1860 Wiehle Avenue, Reston, Virginia 22070 (Group 8)

Mr. John T. Milton, Technical Information Specialist/Librarian, European Office of Aerospace Research, Box 14, FPO New York 09510 (Group 1)

Ms. Gene Minnich, US Army Aeronautical Depot Maintenance Center, Reference and Research Branch, Corpus Christi, Texas 78419 (Group 1)

Ms. Anzella J. Mitchell, Department of the Navy, Office of the General Counsel Library, Washington, D.C. 20360 (Group 2)

Ms. Aileen T. Moon, Library Technician, US Army SAFEGUARD System Command, P.O. Box 1500, Huntsville, Alabama 35807 (Group 8)

Mr. Charles R. Moore, US Army Foreign Science and Technology Center, 220 Seventh Street NE, Charlottesville, Virginia 22901 (Group 5)

Ms. Mildred M. Morris, Chief Librarian, Special Services Libraries, Fort Gordon, Georgia 30905 (Group 1)

Ms. Margaret M. (Jims) Murphy, Army Materials & Mechanics Research Center, Watertown, Massachusetts 02172 (Group 1)

Ms. Evelyn B. Myers, US Air Force Academy Library, US Air Force Academy, Colorado 80840 (Group 8)

Ms. Josephine Neil, Regional Librarian, Education and Training Support Detachment (Code 6203), Naval Base, Building 45, Charleston, South Carolina (Group 3)

Ms. Wilhelmina H. Nelson, Librarian, Depot Library, Parris Island, South Carolina 29905 (Group 1)

Ms. Florine A. Oltman, Air University Library, Maxwell Air Force Base, Alabama 36112 (Group 3)

Ms. Marie T. O'Mara, Naval Submarine Medical Research Laboratory, Submarine Base, Box 600, Groton, Connecticut 06340 (Group 1)

Ms. Ingjerd O. Omdahl, Special Services, Headquarters First US Army, Ft. George G. Meade, Maryland 20755 (Group 3)

Ms. Mildred B. Owen, US Army Hospital Medical Library, Building 6235, Fort Carson, Colorado 80913 (Group 2)

Ms. Billie A. Owens, Sheppard Air Force Base Library FL 3020, SSL, Sheppard Air Force Base, Texas 76311 (Group 1)

Ms. Richard C. Owens, Base Library, Columbus Air Force Base, Mississippi 39701 (Group 5)

Mr. Grover P. Parker, AF-AFLC, 2750/SS1, Wright-Patterson Air Force Base, Ohio 45433 (Group 2)

Ms. Sybil P. Parker, US WAC School, Building 1081, Ft. McClellan, Alabama 36201 (Group 2)

Ms. V. Estelle Phillips, Air University Library, Maxwell Air Force Base, Alabama 36112 (Group 8)

Ms. Jo L. Pierce, US Army Missile and Munitions Center and School, Office of Secretary, Technical Library, Building 3323, Redstone Arsenal, Alabama 35809 (Group 1)

Ms. Glenna Piersall, Department of the Army, Special Services, Post Library, Fort Campbell, Kentucky 42223 (Group 1)

Ms. Mary Louise Pitts, Air University Library, Maxwell Air Force Base, Alabama 36112 (Group 6)

Ms. Joyce B. Plaster, Redstone Scientific Information Center, Redstone Arsenal, Alabama 35809 (Group 1)

Mr. Joseph M. Powers, Defense Documentation Center, Cameron Station, Alexandria, Virginia 22314 (Group 5)

Ms. Beth R. Price, Redstone Scientific Information Center, Redstone Arsenal, Alabama 35809 (Group 5)

Mr. Louis Rains, Office of Naval Research, Boston Branch, 495 Summer Street, Boston, Massachusetts 02210 (Group 1)

Ms. Mary V. Randolph, Army Library, TAGO, Pentagon, Washington, D.C. 20310 (Group 5)

Ms. Gwendolyn L. Redd, Special Services, Center Library, Fort McClellan, Alabama 36201 (Group 7)

Ms. Dorothy A. Redmond, Special Services Library Branch, Library Services Center, Building 1607, Fort Leonard Wood, Missouri 65473 (Group 2)

Ms. Ruth H. Reynolds, Headquarters MASSTER (ATMAS-PA-PUB-L), Fort Hood, Texas 76544 (Group 8)

Ms. Myrtle J. Rhodes, Naval Coastal Systems Laboratory, Panama City, Florida (Group 5)

Ms. Lois M. Robertson, NASA-MSFC, Marshall Space Flight Center, Alabama (Group 1)

Ms. Pearl O. Robinson, Naval Ship Engineering Center Philadelphia Division, Library Building 633, Philadelphia, Pennsylvania 19112 (Group 2)

Mr. Phillip Rochlin, Naval Ordnance Station, Technical Library, Indian Head, Maryland 20640 (Group 8)

Ms. Clara T. Rogers, Redstone Scientific Information Center, Redstone Arsenal, Alabama 35809

Ms. Eunice V. Salisbury, US Army Cold Regions Research & Engineering Laboratory, P.O. Box 282, Hanover, New Hampshire 03755 (Group 1)

Ms. Regine L. Sanders, Librarian, Physical Sciences & Engineering, Base Library, Keesler Air Force Base, Mississippi 39534 (Group 8)

Ms. Ada E. Schwartz, TAGO, Department of the Army, DAAG-EMS-L, Washington, D.C. 20314 (Group 5)

Mr. Earl R. Schwass, Naval War College, Newport, Rhode Island 02840 (Group 5)

Ms. A. Janelle Scoggin, US Army Southeastern Signal School, Fort Gordon, Georgia 30905 (Group 1)

Mr. Robert Severance, Air University Library, Maxwell Air Force Base, Alabama 36112 (Group 3)

Ms. Mary L. Shaffer, Army Library Division, TAGO, Pentagon, Washington, D.C. 20310 (Group 5)

Mr. Robert S. Shaffer, US Air Force Academy Library, US Air Force Academy, Colorado (Group 1)

Mr. Grady Sibley, Little Rock Air Force Base, Jacksonville, Alabama 72076 (Group 1)

Ms. Rosamond L. Sidick, Redstone Scientific Information Center, Redstone Arsenal, Alabama 35809 (Group 1)

Ms. Carolyn C. Slayden, Redstone Scientific Information Center, Redstone Arsenal, Alabama 35809 (Group 5)

Ms. Maxine C. Smith, Department of the Army, Corps of Engineers, US Army Engineer Division, Dallas, Texas 75202 (Group 8)

Mr. Ruth C. Smith, Naval Ship Systems Command, Scientific Documentation Division, Washington, D.C. 20360 (Group 5)

Mr. Paul Spinks, Dudley Knox Library, Naval Postgraduate School, Monterey, California 93940 (Group 5)

Mr. George J. Stansfield, National War College, Ft. McNair, 4th and Posts S.W., Washington, D.C. 20315 (Group 5)

Ms. Patricia H. Steadman, Defense Nuclear Agency, Technical Library, Washington, D.C. 20305 (Group 8)

Ms. Evelyn B. Stephan, Chief Librarian, Special Services Division, Library Branch, HQ XVIII Abn Corps & Fort Bragg, Fort Bragg, North Carolina 28307 (Group 7)

Ms. June C. Stercho, US Air Force, Armament Development and Test Center, Technical Library, ADTC(DLOSL), Eglin Air Force Base, Florida 32542 (Group 1)

Ms. Nancy N. Stilson, Redstone Scientific Information Center, Redstone Arsenal, Alabama 35809 (Group 1)

Mr. Glenn S. Stover, Yuma Proving Ground, Technical Library, Yuma, Arizona 85364 (Group 8)

Ms. Yvonne J. Taylor, US Army Missile and Munitions Center and School, Office of Secretary, Technical Library, Building 3323, Redstone Arsenal, Alabama 35809 (Group 2)

Ms. Janine M. Terry, Special Services Library, Directorate/Administration, New Cumberland Army Depot, New Cumberland, Pennsylvania 17070 (Group 3)

Ms. Marguerite T. Thomas, Naval Medical Field Research Laboratory, Camp Lejeune, North Carolina 28542 (Group 1)

Ms. Margaret B. Thornton, Technical Library Division, Technical Support Directorate, Edgewood Arsenal, Maryland 21010 (Group 5)

Ms. Mariana J. Thurber, TAGO, Department of the Army, DAAG-EMS-L, Washington, D.C. 20314 (Group 2)

Mr. Raymon Trisdale, Chief, Logistics Library, Fort Lee, Virginia 23801 (Group 6)

Ms. Ruth R. Townsend, Chief Librarian, Library Branch, Post Special Services, Fort Hood, Texas 76544 (Group 2)

Ms. Thelma S. Turnage, Administrative Librarian, Base General Libraries, Marine Corps Base, Camp Lejeune, North Carolina 28542 (Group 1)

Ms. Alreeta Viehdorfer, US Air Force Accounting and Finance Center, 3800 York Street, Denver, Colorado 80205 (Group 7)

Mr. George K. Vrooman, Watervliet Arsenal, SWEWV-ROT-L, Watervliet, New York 12189 (Group 2)

Ms. Mary Louise Wallace, US Army Armor School, Fort Knox, Kentucky 40121 (Group 8)

Ms. Dorothy S. Ward, Redstone Scientific Information Center, Redstone Arsenal, Alabama 35809 (Group 5)

Mr. Jack C. Ward, Technical Library Division, Administration Office (AD-L), White Sands Missile Range, New Mexico 88002 (Group 8)

Ms. Mary C. Ward, Naval Ordnance Laboratory, Silver Spring, Maryland 20910 (Group 1)

Ms. Mary O. Ward, Air University Library, Maxwell Air Force Base, Alabama 36112 (Group 6)

Ms. Sylvia J. Webber, Librarian, Defense Logistics Studies Information Exchange (DLSIE), Fort Lee, Virginia 23801 (Group 7)

Mr. Egon A. Weiss, US Military Academy Library, West Point, New York 10996 (Group 1)

Ms. Lillian W. West, Redstone Scientific Information Center (AMSMI-RBLO), Redstone Arsenal, Alabama 35809 (Group 1)

Ms. Mildred R. West, Librarian, US Army Engineer District, P.O. Box 1229, Galveston, Texas (Group 1)

Mr. Leonard C. Weston, Headquarters, USA Test and Evaluation Command, Historical Division, Building 314, Room 257, Aberdeen Proving Ground, Maryland 21005 (Group 1)

Ms. Sarah S. Whitaker, Redstone Scientific Information Center, Redstone Arsenal, Alabama 35809 (Group 5)

Ms. Patricia Wittgruber, Aerospace Research Labs, Wright-Patterson Air Force Base, Ohio 45433 (Group 5)

Ms. Orrine Wojnowsk, Air Force Human Resources Laboratory, Lackland Air Force Base, Texas 78236 (Group 2)

Ms. Kathy Youel, Reference Librarian (Code 1311), Naval Undersea Center, San Diego, California 92132 (Group 1)

Ms. Evelyn G. Young (AFCS/1840SS), Richards-Gebaur Air Force Base, Missouri 64030 (Group 8)

Ms. Eleanore M. Zeman, Army Missile Command Directorate for Maintenance, Redstone Arsenal, Alabama 35809 (Group 3)

Ms. Margrett B. Zenich, Office, Chief of Engineers, Stinfo Division, 1000 Independence Avenue, S.W., Washington, D.C. 20314 (Group 3)

Ms. Kathryn T. Zuzick, National Military Command System Support Center, Room BE 685, The Pentagon, Washington, D.C. 20301 (Group 5)

SPONSORS OF MILITARY LIBRARIANS' WORKSHOPS

1st - 1957: Air University
Maxwell Air Force Base, Alabama
(Proceedings: AD 660919)

2nd - 1958: Army Artillery and Missile Center
Fort Sill, Oklahoma
(Proceedings: AD 824675)

3rd - 1959: Naval Postgraduate School
Monterey, California
(Proceedings: AD 479447)

4th - 1960: Armed Services Technical Information Agency
Washington, D.C.
(Proceedings: AD 243000)

5th - 1961: Air Force Academy
Colorado Springs, Colorado
(Proceedings: AD 665760)

6th - 1962: White Sands Missile Range
New Mexico
(Proceedings: AD 493785)

7th - 1963: Naval Ordnance Laboratory
Silver Spring, Maryland
(Proceedings: AD 493137)

8th - 1964: Air Force Weapons Laboratory
Albuquerque, New Mexico
(Proceedings: AD 632300)

9th - 1965: Military Academy
West Point, New York
(Proceedings: AD 638928)

10th - 1966: Navy Electronics Laboratory
San Diego, California
(Proceedings: AD 645982)

11th - 1967: Air Force Institute of Technology
Wright-Patterson Air Force Base, Ohio
(Proceedings: AD 669362)

12th - 1968: US Army War College
Carlisle Barracks, Pennsylvania
(Proceedings: AD 685843)

13th - 1969: The Naval War College
Newport, Rhode Island
(Proceedings: AD 710395)

14th - 1970: Industrial College of the Armed Forces
Washington, D.C.
(Proceedings: AD 732461)

15th - 1971: Headquarters, United States Air Force
San Antonio, Texas
(Proceedings: being published)

16th - 1972: US Army Missile Command
Redstone Arsenal, Alabama

———◇———

Future Plans

17th - 1973: *Naval Research Laboratory*
Washington, D.C.

18th - 1974: *Fort Huachuca*
Arizona

19th - 1975: *Air Force Academy (tentative)*
Colorado Springs, Colorado